2 FREE CDS

www.thinkdigit.com

Rs 100 Subscriber Copy NOT FOR SALE   July 2003

digit

>> Your Technology Navigator

GEAR to
COMBAT

Stop Hackers cold. Wipe out Spyware.
Get rid of Viruses and Net Nasties forever!

We decide the best
LCD Display OR
CRT Monitor
for YOU

digit
JULY 2003

45 Tips to get the most
out of your media player

Linux Works!
How to Install and Uninstall software

@#$%&... Not again
Stop irritating pop-ups
Keep your e-mail spam free

Beat the heat Discover the
coolest solution for your CPU

PLUS

Reviewed: Sony CLIE PEG-TG50, Apple iPod
Enter the Matrix, X2: Wolverine's Revenge
Hi-Tech battle gear for future wars

Picking the Rights Fight

Buying a computer and the assorted peripherals is quite an expensive affair. If you have owned a computer for any length of time, you would be acutely aware of how far computers are from painless, 'install it, forget it' consumer electronics. There are always issues with component failures or upgrades due, and for those there is the inevitable interaction with your local dealer who will tell you that the replacement will be available in 2 weeks time. If you get him to talk to you, that is.

Try taking it upon yourself to pursue the matter with the company, and you end up talking to some call centre executive who can only answer questions that are on his or her list, and will forward your matter to the company "soon". Call centres too don't always have their act together, so no surprises if a "system failure" means you will have to wait another 3-4 days just to have a technician give your once-proud PC a look-see.
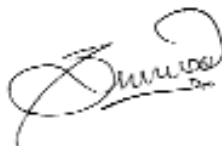
Real experiences with major brands reflect this sad truth.
When was the last time you had a quick and satisfactory response from the company you paid in full for a 17-inch monitor?

The monopoly model that the cable broadband vendors enjoy almost everywhere across the country means that you either stick to your trusty modem and freedom to choose an ISP that gives you what you want, or put up with whatever your local cable guy can manage. With lower up-front costs, low barriers to switch providers and plenty of choice in every city, cell phone customer service levels are consistently higher than any other service company.

Once a high value purchase has been made, the vendor has effectively taken advantage of whatever value it can offer. Long term purchases such as monitors, hard-disks, motherboards, etc., have no recurring value and poor customer support cannot cause any financial consequences in the short-term. Very few consumers have the leisure to actually take a company to court, and ensure their problem is redressed.

Some things never change. Or do they?

Please voice your opinion in our reader poll this month.

Sumod_hajela@jasubhai.com

Sumod Hajela
Assistant Editor

"Long term purchases... have no recurring value and poor customer support cannot cause any financial consequences in the short-term"

index ■ ■ magazine

26 ►
Tackle the enemy of the state, with the technology of the future!

◄ **107** Get ready to cook up a software installation in Linux, in a jiffy.

▲ **40** egal, sterling displays that delight!

▲ **100** ring a surprise on the pop-ups before they surprise you!

104
Work fast with
master slides

103
Put your Desktops to
work

64
Secure
your PC

40
Choose your View

107
Install and un-install
software before you
can say 'Linux'

92
Use the spray
on Net pests

89
Cooling solutions
for your PC

To subscribe to Digit, fill
out the subscription form
available online at
www.thinkdigit.com/subscribe

Reviewed this month

ON THE CD

HIGHLIGHTS

Acrobat 5.0.6 (Linux)
Type: Free   Size: 8.45 MB
Mindware\Software\Essentials

Code Chameleon
Type: Trial   Size: 1.51 MB
Mindware\Software\Developer Tools

DVD Writer Pro
Type: Trial   Size: 3.5 MB
Mindware\Software\Developer Tools

Fresh Download 5.70
Type: Free   Size: 1.4 MB
Mindware\Software\Internet

GTRipple v1.3
Type: Free   Size: 0.7 MB
Mindware\Software\Home

LogoManager 1.3 for Nokia Phones
Type: Trial   Size: 0.6 MB
Mindware\Software\Home

Majesty (Linux)
Type: Trial   Size: 41.3 MB
Playware\Arena\Games

MusicMatch Jukebox 8.0
Type: Trial   Size: 10.6 MB
Mindware\Software\Multimedia

Pacific Gunner
Type: Trial   Size: 32.7 MB
Playware\Arena\Games

PacMania II
Type: Trial   Size: 4.8 MB
Playware\Arena\Funzone

StartRight 1.1.1
Type: Free   Size: 0.3 MB
Mindware\Software\Developer Tools

Tony Hawk's Pro Skater 4
Type: Trial   Size: 132.7 MB
Playware\Arena\Games

Unforgiven Organizer
Type: Free   Size: 6.7 MB
Mindware\Software\Office

XMMS 1.2.7 (Linux)
Type: Free   Size: 2.7 MB
Mindware\Software\Multimedia

KNOW YOUR CD

MINDWARE \ CONNECT

The Connect section of the Mindware CD helps you to extract more from the Internet. It has two subsections: bookmarks and newsletters. Every month, the bookmarks section brings you some of best sites on a specific theme. This month, we bring to you online testing sites. These sites test your skills on a wide range of fields, from serious stuff like IQ and psychological make-up to hilarious topics such as what comic character you resemble. So, go ahead and get into the testing mode.

In the Newsletters section, we give you the sites that offer periodic newsletters on a specific topic. Recipes and cocktails are the flavours of this month. The chosen sites send mouth-watering recipes periodically to prevent your taste buds from dying.

MUST TRY SOFTWARE

UNREAL II: THE AWAKENING

Unreal II is the sequel to the original *Unreal.* As the player, you are the lone representative of the Law in a distant sector of space. You patrol your beat in the starship, Atlantis. Things are quiet, until the sector erupts in a full-scale interstellar war. You are caught in the middle of it, and must balance your responsibility to protect the colonists, archaeologists, miners and other civilians in your sector.
Type: Trial   *Size:* 153 MB
Playware\Arena\Games

OpenOffice.org for Linux

OpenOffice.org is an Open Source multiplatform office productivity suite. It includes the key desktop applications such as a word processor, spreadsheet, presentation manager and a drawing program. It has a user interface and features set similar to other office suites. OpenOffice.org also works transparently with a variety of file formats, including those of Microsoft Office.
Type: Free   *Size:* 70.2 MB
Mindware\Software\Office

Photoshop Album Starter Edition

Photoshop Album is designed to help you find and organise all your digital photos. In the Starter Edition, you can see 250 of your favourite photos, audio clips, video clips and creations in one place, organised by date, or any subject you choose. You can also fix basic flaws and share your photos in slide shows, albums, cards or calendars.
Type: Trial   *Size:* 134 MB
Mindware\Software\Multimedia
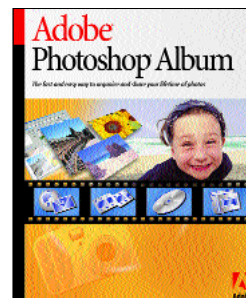
www.thinkdigit.com

taste technology at www.thinkdigit.com

WEB SPECIAL

Your 24-hour finance manager

Do you still pay your bills by cheque, by hand at your bank branch and prefer a personal visit to your banker, much the way your parents did? If yes, then you haven't heard about online finance services and online banking, or probably never tried it. Guess what? It's worth a try.

SUBSCRIBE

Want to subscribe to Digit?
Or is it time to renew your subscription?
You can now subscribe online!

BY DEMAND

You get to choose what goes on Digit Interactive. This month, you have chosen:

Forte Free Agent
Size: 2.29 MB
Mindware

Rise Of Nations
Size: 194 MB
Playware

Expect these on the August 2003 CDs

WEB SPECIAL

Me, Myself and Workin'

Long, hot hours of traveling, difficult work environments and slave drivers are all passé.
Be your own boss, work in the comfort of your air-conditioned, music-filled room and make big bucks!

index ■ ■ colophon

Write Back

Got feedback on Digit or
www.thinkdigit.com? Have something to say
about an article we published?
We'd love to hear from you. Send us your
rants and raves at
readersletters@jasubhai.com

Product Testing

Want your product reviewed by Digit?
Contact our Test Centre at
testcentre@jasubhai.com

Software on CD

To submit software for inclusion in the Digit
Interactive CDs, contact us at
cdcontent@jasubhai.com

Help!

Complain about your missing copy?
Cover CD not working properly?
Renew your subscription
Report a change in mailing address
Order a back issue
Need assistance on any of these?
Contact Customer Service at
Tel: 022-27629200/9211 Extn: 1013/1016
Fax: 022-27629274
help@jasubhai.com

Endorsements/Reprints

The Best Performance and Best Value Awards
are the undisputed stamp of excellence for
technology products in India. If you are a winner and are
interested in ordering article reprints or using our logos,
contact
vinith_shetty@jasubhai.com

digit Promise to our readers

While every effort is made to
ensure that the information and
prices provided are correct, there
may be some variation due to dif-
ferences in local taxes across
states. Please keep this in mind
before buying any product.

To Advertise

CONTACT OUR BRANCH OFFICES

news feed

snapshot

80 per cent of **children** using **e-mail** receive **spam** on a daily basis

Source: Symantec

Unique code

In an amendment to its lawsuit filed in March 2003, Santa Cruz Operation (SCO) seeks at least $1 billion in damages from IBM's alleged breach of its contract with SCO; another $1 billion for breach of the Unix contract signed by Sequent, which IBM acquired in 1999; and another $1 billion for unfair competition. The suit specifically blames Linus Torvalds for allowing proprietary Unix code into Linux.

SCO claims IBM has made multiprocessor operating system technology available for free distribution to anyone in the world, which can be used for anything, including development of weapons of mass destruction. SCO also accuses

ILLUSTRATIONS: Farzana Cooper

that IBM of copying its Remote Copy Update (RCU) system, for relieving some memory bottlenecks on multiprocessor servers.

Recently, SCO uncovered a 1996 amendment to the contract, under which Novell sold many of its Unix assets to SCO's predecessor, Santa Cruz Corporation. Now, SCO Group has revoked IBM's license to sell its version of Unix, called AIX. It said that this termination not only applies to new business by IBM, but also existing copies of AIX that are installed at all customer sites, thus all of it has to be destroyed.

IBM maintains that it has done nothing wrong and that its customers need not worry.

Matrix Reloaded, offloaded!

Matrix Reloaded has been banned in Egypt. The country's censorship board was concerned about the storyline, which revolves around the search for the God and control of the human race. Violence scenes were also citied as a reason for the ban. While the committee, consisting of 15 critics, academics, writers and psychologists, gave credit to the movie's fabulous

effects; it felt the movie handles sensitive issues related to three divine religions. Also, it added that these issues have caused a crisis previously. Thus, they felt that screening the movie could cause trouble and harm social peace. This press too, added fuel to the fire by launching a campaign against the Jewish and Zionist ideas portrayed in the movie.

Earn Money from Unreal!

nVidia, and the makers of *Unreal Tournament* are offering prizes amounting to $1,000,000 in search of great mods. For *UT 2003*, or the unreleased *UT 2004*. The contest is divided into best mod, best character, best use of 3D sound, and best real-time non-interactive movie.

The winners also receive a UT game engine license and high performance PC hardware. To participate, all you need to do is develop a free working mod, and then register at *www. makesomethingunreal.com/*. The contest is divided into three levels and the results will be announced in The Game Developers Conference, San Jose in 2004. The contest also serves as a talent hunt for the developers who are most likely to hire the winner for future projects.
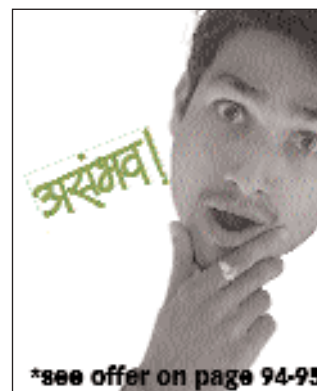
■ Since 1978, more than 1 billion Intel x86 processors have been sold ■ Intel takes the Pentium 4-M beyond the 3 GHz mark

14   JULY 2003

ATi Express unstoppable

ATi's new graphics card, the R420 will have a completely different architecture from the R3XX series. The R420 is being developed under the project name Loki. ATi is looking at releasing it late November 2003, and making it publicly available from early 2004. The card features support for both, Pixel Shader 3.0 and Vertex Shader 3.0. It is speculated that the card will sport GDDR2 memory and a clock speed of 500 MHz.

It will be fabricated on a 130nm process. The company recently said that its next-generation VPU would have more than 200 million transistors.

R420 will have native support for PCI Express(formerly known as 3GIO). The PCI Express will be the interface for both, video cards, and other add-on cards, thus replacing the AGP/PCI combination. The support for PCI Express will be available from mid-2004. Till then, ATi plans to use the AGP-PCI Express bridge to make the card work with the existing AGP 8X interface.

May the best game win

Every year, Electronic Entertainment Expo, (E3), the platform for bold new ideas or great sequels of the gaming world.

One of the most anticipated games exhibited this year was *Half Life 2*, the sequel to the popular best-selling game. *Half Life 2* has been in development for the past 5 years, and grabbed four major awards at E3, this year.

Halo 2, the sequel to the Xbox hit, bagged the Best Console Game award. *Halo 2* is well under development, and is looking to be as good, if not better than the original game.

E3 also saw massively multiplayer online role playing games (MMORPG) making a wide emergence like never before. *City Of Heroes* was an ambitious project, that took the honours for the Best Online Multiplayer Game. The game will be made such that you will stand apart from other characters by way of unique costume combinations. The game will feature nemesis similar to the super villains seen in major comics. The developers, Cryptic Studios, have not set a release date for the game.

statattack

Source: Vilaweb.com

The PSX is coming

Sony has announced an upgrade to the popular PlayStation 2 gaming console making it more than a gaming device. The new PlayStation, dubbed PSX, will have a DVD writer, a TV tuner, a 120 GB hard drive and the ability to download movies and music. It also offers a USB 2.0 port, support for a memory stick and is equipped with an Ethernet adapter. The optical drive will have a slot-loading interface, and the processor will be the same as that of the PS2. The company claims that this is not PlayStation 3, but an entertainment box that is a crossover between game machines and consumer electronics devices.

INFOGRAPHICS: Sachin Dalvi

■ Microsoft takes over the Romanian firm, GeCAD Software, makers of anti-virus technologies for Linux and Novell

No IE for Mac

Microsoft has halted the development of Internet Explorer for the Apple platform. Although security and performance updates may be provided, no new versions will be released. The company feels that Apple's browser, Safari, is better suited for Apple customers. Microsoft also said that it does not have access to Macintosh, which it needs to compete against Safari. The 5-year deal that the company had with Apple for providing Mac versions of its browser and Office suite, has expired. This may put the Mac community in a fix, as many sites need Internet Explorer for optimum viewing. Surveys show its market to be an astounding 95 percentage.

Apple launched the development of its browser in January this year, based on the open-source KHTML development project, which is designed for use with KDE.

Although Apple has released many versions of the Safari, a final version is yet to be released.

snapshot

There are close to
13,000 Wi-Fi
access points in
Manhattan, New York;
9,669 are open
non-WEP nodes
and **4,038** closed
WEP nodes

Source: Intel and the Public Internet Project

Super fast Internet2

In a recent development, a research team at California Institute of Technology have developed a system called Fast TCP, which could run on the same Internet infrastructure we have today.

In Fast TCP, the time taken by the packets to reach, and the time taken by acknowledgements to come back is measured continuously. This reveals the delays on the line, giving early warnings of likely packet losses. The Fast TCP software uses this to predict the highest data rate the connection can support without losing data.

By ganging 10 Fast TCP systems together, the researchers achieved transmission speeds of over 8.6 Gbps, which is more than 6000 times the capacity of ordinary broadband links.

In a collateral effort, researchers at Los Alamos National Labs were able to send one terabyte of data from California to Geneva in under an hour using 10 Gig E NICs from Intel, with a standard Linux TCP implementation. At this 2.38 GBps rate, users could send a full CD in 2.3 seconds, or 200 full-length DVD movies in an hour.
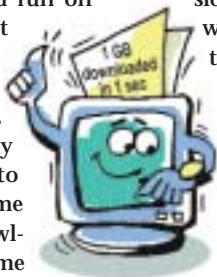
The mother of all big brothers

Applied Digital Solutions (ADS) has taken a step into the future, with the testing of its prototype sub-dermal GPS tracking device— Digital Angel, which is 6.35 cm in diameter and 1.27 cm thick—about the size of a cardiac pacemaker. It is designed to fit into the human chest cavity, so as to be able to track you wherever you go.

The device consists of an antenna and an induction-based rechargeable battery system that can be recharged through your skin. It connects via a cell phone network to relay the satellite tracking data to another person.

There are also chips under development that could monitor your child and tell you when he falls, or how bad the wound is, or tell the paramedics about his existing allergies, and finally give the doctors at the hospital the entire medical history. You could even be automatically billed for the medical expenses, with the identification and health insurance chip that could be embedded in your hand. Although this may sound too farfetched, the only factor standing in the way of their implementation is public acceptance.

*see offer on page 94-95

heroes

3G
3G just got a shot in the arm after NTT DoCoMo exhibited its products and services at CeBIT, New York. DoCoMo is now planning to introduce fuel cell powered 3G phones by 2004.

Open Source
To combat proprietary licenses, Brazil plans to migrate 80 per cent of all computers in state institutions and state owned companies from Windows to open source solutions, such as Linux. In Europe, Munich too has opted to put in Linux in over 14,000 desktop PCs.

E-Commerce
E-commerce is picking up in Europe. A recent study predicts that European e-commerce should cross the $200 billion mark by 2006.

zeroes

Online file sharing
A bill currently being debated in the US Congress, will permit the FBI to develop a program to track online file-swapping for copyright violations. The information gleaned could be shared between other law enforcement agencies, as well as copyright owners and ISPs.

DVD
With the threat of DRM implementation in DVDs and CDs, the format is attracting the ire of consumers. Other than Sony and Iomega, no other company made DVD writers that are compatible with all exiting formats.

Wi-Fi
In Europe, Wi-Fi hasn't taken off as expected. Analysts say that the service is bound to be patchy, and roaming with Wi-Fi equipment will be cumbersome due to incompatible billing systems.

■ Transmeta signs a deal to develop, and sell its Linux versions meant for embedded devices in China, and the Asia Pacific

This DVD will self-destruct in 5 seconds…

Flexplay and Buena Vista Home Entertainment have unveiled a new technology that makes DVDs unreadable after 48 hours. Known as an EZ-D, once it is removed from the packaging, its exposure to oxygen interacts with the disc's coating to make it inoperable, roughly two days later. This is all part of a new offer from Buena Vista Home Entertainment's DVD rental program to be launched this

August. The Flexplay system, which uses materials from GE's plastics division, can play on any system.

The DVD with a limited shelf life isn't new. Circuit City tried to roll out the first timed DivX disc format and failed. Robert Moore, president of 321 Studio, said, "This move to create self-destructing DVDs by Buena Vista Entertainment

implies that consumers are dishonest in their use of technology".

The creation of these non-recyclable, one-use products will create unnecessary landfill waste, or release harmful toxins into the air when such trash is incinerated. Environmental experts agree that self-destructing DVDs are extremely harmful to the environment. In addition, consumers are displeased with the negative environmental impact of these products. Consumers that rent DVDs would rather prefer to either to purchase or rent traditional DVDs.

PS2…oops, I mean a Supercomputer…

Scientists at the National Center for Supercomputing Applications at the University of Illinois's Urbana-Champaign campus have developed a supercomputer by wiring 70 PlayStations together. The consoles were stripped off their plastic casing and networked together using a high-speed HP network switch. The project is powered by the open source Linux operating system, and otherwise, uses all standard components. Its computing power comes from a highly tuned custom designed silicon chip, called the Emotion Engine. This superchip is capable of churning out an amazing 6.5 billion mathematical operations a second, and was originally intended to quickly ren-

der and transform pixels on a television screen to produce life-like graphics.

Though there is a memory bandwidth limitation when using such consoles, scientists claim that the cluster can solve problems in a narrow range of scientific applications. They are currently writing specially tuned applications to run on the system to benchmark it.

The centre chose the PlayStation 2, because unlike the Xbox, Sony sells a special Linux module and a high-speed network connection and a disk drive. With each console costing less that $200, this could mean a whole new shift towards building supercomputers with low-cost off the shelf technology.

நம்பவே முடியலை!

*see offer on page 94-95

You've got Spam!

According to reports, two-thirds of mobile phone owners have been victimised by spam. The Independent Committee for the Supervision of Standards of Telephone Information Services (ICSTIS) has suggested that SMS spam is a greater violation of one's privacy, and the limited phone capacity for SMS storage may soon not be enough—possibly

blocking legitimate and important SMS messages.

Governments and corporations are beginning to take notice. Microsoft has started a project called Penny Black—named after the first British postal stamp in the 1830's—to find a way to make spammers pay per e-mail they send. The Australian government

has announced that mobile service providers carrying unsolicited bulk messages could be fined up to 10 million Australian dollars.

It is obvious that SMS spam will never be as big a problem as junk e-mail, as the costs of sending bulk SMS messages are much higher. Most people are still learning to live with junk e-mails, and to have the privacy of our mobile phones invaded might just be the last straw.

Open-source in open-sky

Greenberg and O'Neel, heading the Portland State Aerospace Society (PSAS), plan to launch a Linux-powered rocket, equipped with an AMD 586 processor, to 55,000 feet at a speed three times faster than the speed of sound in September 2003. The rocket has an onboard computer with an AMD 586 processor, a Jumptec MOPS/520 PC/104+ board, along with a power supply, a PCMCIA card carrier for an 802.11b card to transmit data to the ground and a carrier board for a 128 MB CompactFlash card for long-term storage. The flight computer runs a bare version of Debian Linux, with the 2.4.20 Linux kernel. Microcontrollers run everything from the inertial measurement system to the recovery device, which triggers a small explosive to deploy the parachutes. The flight computer transmits data to the ground through a 2.4 GHz wireless link.

Never say never again

In a total turnaround of their earlier policy, Metallica is now embracing the online world, and has just opened up *www.metallicavault.com*, that comes with the tagline 'Download. Burn. Share. Kick A**'. Fans who buy Metallica's new album, will find a code inside the package that lets them download over six hours worth of content in the MP3 format, for free. Eventually, Metallica hopes to have several hundred hours of content on the site.

Three years ago, Metallica drummer Lars Ulrich and rapper Dr. Dre spearheaded the drive to bring down Napster, by compiling lists of over 3,00,000 users who were swapping their songs and other copyrighted material. Napster responded by filing counter claims and then blocking material by specific artists, but eventually the service floundered.

Metallica released their new albums five days earlier than expected, claiming that "substandard versions" of the tracks were already available widely on the Internet.

After this announcement by Metallica, a host of artists are considering adding selected tracks online, to appease their fans. Roxio is restarting the controversial service—but it's going to be paid.

*see offer on page 94-95

quoteworthy

"The most unfortunate thing is that India still seems to believe in proprietary solutions"

President A.P.J. Abdul Kalam praising open source software

"GameBoy is for 10-year-olds… If you're 20 or 25 years old, it's probably not a good idea to draw a Game-Boy out of your pocket on a Friday night in a public place"

Ilkka Raiskinen, Nokia's head of entertainment and media, attacking Nintendo's Game Boy Advance

"...kids are just as susceptible to being bombarded by spam advertising inappropriate products and services."

Steve Cullen, Senior Vice President, Consumer and Client Product Delivery at Symantec. Their survey of netizens between the ages of 7 and 18 revealed that 47 per cent received e-mails with X-rated Web site links

tomorrow'stechnology

Memory a-billion

Nantero, a US based company has developed the first 10 GB nanotechnology memory (NRAM) device using standard chip production techniques. NRAM works with carbon nanotubes that are balanced on silicon ridges. Under differing electric charges, these tubes can be placed into one of two positions, representing zero and one. Very less power is needed to place these tubes, being very small, and much more conductive than copper. This makes it easy to sense the position and read the data. Since they have a high tensile strength, they are expected to survive over a trillion write cycles. Nantero solves the problem of misaligned nanotubes by using lithography and etching to remove them. The company is looking at a $100 billion market of such NRAM chips that might eventually replace all forms of standard memory devices.

■Linus Torvalds is taking a long leave of absence from Transmeta, and is going to be working in the Open Source Development Lab fulltime.

They got it all wrong!

Dear Sumod,

The article regarding the piracy of software was extremely appreciated, and I would like to present my view on the issue.

Given the sheer cost of the software today, it is no wonder that more and more people are running to the friendly neighbourhood CD-*wallah* for the latest software and games.

Offer them an alternative and you can see their confusion. As much as we convince ourselves, Linux still has a long way to go in becoming as user-friendly as Windows. And, we still rely on brand names to make our buying decisions. The truth is that the software offered by corporations is never going to be affordable to the general public, and piracy is here to stay.

The solutions are difficult to implement, however if we want to curtail piracy, and corporates do not want to post 'Business worth $70 million lost due to piracy', it is time they became more people-friendly. After all, it is because of the people that they are still in business, and not the other way round.

Mukund
Via e-mail

Hi,

First of all June 2003—Nice work! I was reading about Agent 001 and found that 70 per cent of all software is pirated... well, one small doubt here. How many of us actually utilise the 15,500 bucks worth of Office XP—we use Word, with bold and italics formatting, or Adobe for viewing pictures, or at most, for simple effects. The thing is, for most of the people, it's either free or not at all. So its only 20 per cent of the users who really use the pirated software to its full potential.

Thanks

Abilash
Via e-mail

Dear Abilash and Mukund,
Well said! Everyone wants only the best, and when the resource is infinitely reproducible, such as software, it is harder to think of it as 'theft'. This is a very difficult problem to solve, especially when software prices show no signs of decline, unlike hardware prices that come down every year. While the volume of the real demand for piracy is definitely lower, it still is a significant number. According to BSA, the US has the lowest rate of piracy in the world, but still in excess of 20 per cent.

Calling Vikram

Hello,
I read the letter by Vikram from Orissa (Digit, June 2003, Short Bytes), with great interest. I live in the remotest part of the country, where I read each issue of my technology navigator only by the 20th of the month. I have an assembled computer with a modest CPU speed of 1.6 GHz.

ILLUSTRATIONS: Farzana Cooper

The new games reviewed in Digit interest me a lot and I would love to have them. However, I don't have the means to buy a legitimate copy, nor can I find pirated copies. I would like to get in touch with Mr. Vikram and pursue his offer of pirated games.

V. Malsawma
Via e-mail

Respected sir,
This is my first letter to Digit. I just wanted to know the e-mail ID of Vikram (refer to Digit, June 2003).

Tauseef
Via e-mail

Dear Sumod,
Your anniversary issue was fantastic. Please give me the e-mail id of Vikram mentioned in the past issue?

Ganesh
Via e-mail

In the June Issue, there is a letter from Vikram in which he talks of pirated game CDs costing Rs 25. Please give me his e-mail ID.

Ankit
Via e-mail

Dear Readers,
As an instant validation of the popularity of pirated software, Vikram seems to much sought after for his Rs 25 CDs. However, we are unable to honour any requests to get in touch with him.

Languages

In your article 'One World, One Language', you have written that we can convert any language into English. But how do we find out the language in which the letter is written?

Sanchit
Via e-mail

Dear Sanchit,
Just as language translators are available online, there are also language guessers on the Net. One of the most popular ones is TextCat Language Guesser (**http://odur.let.rug.nl/~vanno-ord/TextCat/Demo/textcat.html**), which not translate the text, but will tell you what language it is in.

digit READERPOLLS

Your vote counts

Q. What kind of forum would you like to use on the Digit Web site?

Trouble shooting and advice	Buying discussions	Magazine feedback	All of the above
36%	6%	4 %	54%

This month's question:
Question:Do you think publishing bad after-sales experiences that our readers endure will help improve vendor's service levels?

☐ Yes ☐ No

Log on to **www.thinkdigit.com** *and vote*

Readership improvement suggestions

Dear Sumod,

I saw the poll results in June issue of my favourite magazine and was happy to see that many of your readers want to see more utilities on the CDs. With ten of my best friends (who are also regular Digit readers), I summed up a list of 61 of the best utilities that we would like to see on the Digit CDs:

CD Ripper 1.72.20
www.maskbit.com
Flyer Screensaver Builder (Standard and Pro) 5.2.1
www.2flyer.com
Aare MP3 WAV Converter 3.6

www.2shareit.com
Ad Muncher 4.5 Final
www.admuncher.com
.
.
.

Well, that's all I had to say! Hope you include these on your forthcoming CD. Please let us know what you think, and the 11 of us will work harder to make our favourite magazine more popular than ever.

Sundeep
Via e-mail

Dear Sundeep,

What a great list! I am sure a many Digit readers will be grateful for your efforts. You can certainly expect to see these software on our forthcoming CDs.

In appreciation for such dedicated effort, we would like to gift you and your friends a set of the 10 CD 'Software for a Lifetime' pack and look forward to being your favourite magazine for the years to come.

Way To Go!

Dear Sumod,

Let me begin by congratulating you, and the Digit Team for your exemplary work on the Anniversary issue. I have been a regular fan of your magazine since I first picked up a copy of Chip in April 1999. The hardware review presented in the June issue was just spell-binding.

With the recent tariff hikes by the TRAI, dial-up access is fast becoming an uneconomical way for people to spend a considerable amount of time online. I, for one, would be extremely delighted if you were to run an article on broadband services.

Also, seeing that the Digit Team is as big a fan of *The Matrix* as we all are, could you please, find some way to give readers free episodes of *The Animatrix*. Plus, a review of *Enter the Matrix* would just put us in ninth heaven.

Very faithfully yours,

Krishnan Rajagopal
Via e-mail

Dear Krishnan,

Team Digit is glad that you, and dozens of our readers enjoyed the anniversary issue. As always, we try to give our readers what they will like most and this issue you can check out our review of *Enter The Matrix*. Getting *Animatrix* on CD though may turn out to be a hard nut to crack, but we will certainly give it a shot.

Shri
by post

Thank you!

Goof Ups

■ Ramnath Shenoy has pointed out an error on page 49 of the June 2003 Digit Special. Under the 'Add Holidays to your calendar' tip, the modification should be *[India] 3* and not *[India]3*. Also, it should be *Republic Day, 2003/01/26* and not *Republic Day:2003/01/26*.

■ Arun Vasudevan has brought to our notice that the tip 'Creating hot wheels effect' resembles a tip by the same name given in the book *Photo-Shop 6, Down & Dirty Tricks* by Scott Kelley. Arun has also pointed out that the image modes from RBG to CMYK, and vice versa should only be changed after editing the document and not before.

Notice any goof-ups?
Write to goof@jasubhai.com

Send your letters marked 'Readers Letters' to the Digit office:
D-222/2, MIDC, TTC Industrial Estate, Om Sagar Building, Nerul, Navi Mumbai 400 706,
Phone: 022-7629191/9200 Fax: 022-7629224
E-mail: readersletters@jasubhai.com

VIPUL SHAH

> *...Chances are that someone in Brazil may read the Mumbai edition of the Times of India at the same time as someone in Mumbai, who gets it at seven in the morning*

Your Daily goes Wherever You do…

On a daily basis, people read either one, or two newspapers, published in their hometown or country, or in the region of their business interests.

Until recently, a traveller could get newspapers from across the world, two days after the day of publication. They were flown in and sold at five star hotel bookshops, airport bookshops, and delivered regularly to companies and embassies. But, post 9/11, this freight has become less attractive to airlines because of the reduction in number of flights and increasing fuel costs. Agreed, that most newspapers are now online, but you don't get them at home, with the same news items and advertisements. Also, vernacular newspapers have a very limited online presence.

In the past two years, two new services have come up to serve this market efficiently—NewsPaperDirect, based in Vancouver and Satellite Newspapers of Netherlands. Both use remote location printing, and give you the publication of your choice at the same time—or even few hours before—it is available in its place of publication. So chances are that someone in Brazil may read the Mumbai edition of the Times of India at the same time as someone in Mumbai, who gets it at seven in the morning.

Both companies offer similar deals. Almost all publications today are prepared using DTP software. Before printing it, a publisher can export these pages to an Adobe Acrobat file, and upload it to NewsPaperDirect and Satellite Newspapers. In 30 minutes, this newspaper will be available world-wide.

NewspapersDirect is available through the business centres of five star hotels and cruise liners. A small setup of Pentium III PCs, running their proprietary software, with 128 Kbps Internet connectivity and an A3 size laser printer is all that is needed. A fresh installation would cost $ 8,000, or less. Usually sold for $ 3 to $ 5 a piece, part of the money goes to NewsPaperDirect that passes on some money to the concerned publication.

The Taj in Mumbai, the first Indian hotel to offer this facility, has a PC and a laser printer with a 512 Kbps leased line. Whenever guests order a publication, it is downloaded, printed and delivered to the room in 30 minutes or less. The newspaper's cost starts from Rs 210, and depends on the number of printed pages.

NewsPaperDirect is also used by Qatar Airlines. They are printed and loaded onto the plane before the flight. NewspaperDirect offers 170 publications and on a typical day, prints 2,500 newspapers, and magazines around the world.

Satellite Newspapers have satellite linked kiosks, each with a touch screen for making selections, a credit card swipe slot for accepting payments, and an A3 laser printer that staples and delivers newspapers in few minutes. These are already present in two hotels at New Delhi. Each kiosk costs $ 10,000 and the newspapers typically cost $ 4 to $ 5 a piece. These kiosks will be seen in the future at airports, hotel lobbies, cruise ships, apartment buildings, embassies, etc. Satellite Newspapers carries as many as 120 publications that are limited to 48 pages. The editor decides on the pages to keep; NewspaperDirect doesn't have such a limit.

Both systems are able to limit or customise the newspaper selections made available at a particular place, or kiosks in any country so as to avoid problems with the local authorities, or culture police. Often, a publisher has existing region specific agreements, and hence may not print those newspapers there.

Delivering newspapers overseas, in time, is a logistical nightmare. Using this technology, it can now be done without any printing, paper or transportation costs. The number of copies sold through these systems also account for their audited circulation figures.

The advantages are huge for everyone, and the environment. Since you order and pay to get the newspaper printed, there are no unsold copies. Also, the publisher gets to keep the advertisement money, but doesn't have to handle distribution costs. In the future, when paper-thin flexible displays replace paper in newspaper business, both these infrastructures can serve as single points for the content of several hundred newspapers. **d**

Vipul Shah is a chartered accountant, and writes and consults on Internet, e-commerce, banking and finance technologies. He can be reached at vipuls@yahoo.com

WIRED WARRIORS:

The Super-Grunts of Tomorrow

Cutting edge computing technology and breakthroughs in civilian and military technology are going to be powering the war machine of tomorrow. Here come some of the more interesting developments that will fight the wars of the future

A s George S Patton, the strategist US General of the Second World War, put it, "...no b****** ever won a war by dying for his country. You win a war by making the other poor dumb b****** die for his country". In a world that has enormous potential for conflict, militaries around the world are taking Patton's words very seriously.

Right from ancient times, the foot soldier has fought and won the battle for the victor. However, over the past decade or so, the infantry's role has changed—the emergence of smart munitions and precision aerial bombardment has resulted in the infantryman entering tough urban combat situations to mop up any remaining resistance.

Blood, guts, cordite...and a computer

Tomorrow's heroic soldier isn't going to jump into battle with just a bullet-proof Kevlar vest, a backpack-sized field radio and a commando knife clutched between his teeth. Researchers are looking to equip soldiers to win wars with fewer casualties. The Land Warrior System is the first of several such programs that are looking at revamping the infantry soldier's gear. Prototypes that were developed by several contractors (including Pacific Consultants and Raytheon), are currently being tested by crack troops of the US Army, at their research facilities at the Natick Soldier Centre in Massachusetts. The progress is being watched with interest by several other countries, and are developing similar systems. The Land Warrior is expected to hit the frontlines somewhere around 2006. The US Army is looking at about 30,000-odd Land Warrior systems joining into service then.

The next generation system that is expected to follow is the Objective Force Warrior, expected to enter service around 2010. The core idea of this is integration of computers, navigation and communication technology with infantry weapons systems, making the individual soldier and the soldier's team a lethal networked tool of war.

The designers of the Land Warrior prototype, and the Objective Force Warrior, have put considerable thought into calculating what is needed to re-inforce today's soldier. They started by strip-

ILLUSTRATIONS: Mahesh Benkar

ping apart the conventional soldier's gear, armour and clothing, and then working from scratch. The primary constraint here is weight. Studies have shown that in battle, soldiers tend to throw away gear that is too heavy. The system is designed so that the components are extremely portable and light, yet rugged enough to withstand battle conditions. Finally, to put together the whole system, all future combat systems are planned in such a way that they are built over several upgradeable subsystems—the integrated helmet subsystem, the computer and communication subsystem, the weapons subsystem, the protective clothing, and the software that powers the hardware. The infantry will see integrated weapons systems, such as satellite linked radio, rifle mounted thermal sensors and video cameras, and GPS systems, all of which will give them the edge and tell them where they are and more importantly, where the enemy is.

Sarge… I see unfriendlies in my HUD…

Today's warriors jump into combat situations armed with increasingly sophisticated weapons, but with information that is at least a few hours old. Things move amazingly fast in battle, and soldiers are put at risk if they are just dropped into a hot zone with vague information. The Integrated Helmet Assembly Subsystem

This is how the land warrior is going to be outfitted

(IHAS) is straight out of a sci-fi movie—in the battle zone of the future, the very visible helmet and helmet-mounted gear, is going to be the soldier's networking and communication device. The prototype feeds up-to-date information regarding a combat zone into a HUD (Heads-Up Display), straight off a satellite. Initial systems that will rapidly update tactical information on a map-like layout, and detail the positions of squad mates are on the drawing board. The optical systems come with daylight cameras that will transmit everything a soldier sees, in real time. Additionally, there are lightweight thermal sights, night vision, as well as ten digit GPS and grid coordinate displays. Soldiers will no longer have to carry multiple sights-thermal vision, night vision and so on. Researchers claim that the image that the soldiers will see in the full colour SVGA HUD micro-display should be equivalent to two 17-inch displays right in front of their eyes!

But there is more to come for the HUD, especially for the Objective Force Warrior. Chemical and biological sensors as well as 3D imaging systems, will allow a soldier to view his surroundings from different angles, such as from a squad mate's perspective. The initial systems will allow them to view images and video straight from the weapon mounted sighting cameras. With the HUD integrated with the warrior's rifle sights and firing system, the soldier could accurately fire his assault rifle or spot an inaccessible target and call for indirect fire.

War zones are not the place for delicate instruments, thus the computer and communications subsystem is designed to take a beating and yet continue working. Interestingly, the initial prototypes were developed using a mobile Pentium III class processor, boasted of USB connectivity and ran on a specially developed version of Windows 2000. The computer comes with a solid-state Flash drive with 800 MB of storage, which stores maps and overlays, graphics, battle field information, orders and tactical aids. There will also be real time intelligence getting piped into the flash drive that will be rapidly updated.

But this is just half of the computer and communications subsystem. The other half is what soldiers call the 'battle rattle'—the wireless LAN that networks all the Land Warriors. Everything that a soldier sees, is transmitted from the display mounted on his helmet to all other team

Sorry Sarge, I'm a techno-ignoramus…

Today's trained warriors are as much at ease with a computer, or taking down a network using hacking tools, as they are with stripping apart an assault rifle and putting it back together. Militaries around the world are dealing with a new exercise in warfare—and the turf is the Internet. No army can afford to have soldiers that can't bring down any enemy's communication networks, or repair a network outage whilst under fire. Cyber warfare involves anticipating, averting, and responding to cyber terrorism attacks that try to yank down world-wide communications networks.

Future programs will look into bringing down all possible infrastructure that has been hooked to the Internet. The US military training schools have been actively training cadets in cyber warfare, and so have other countries, such as China. Most of us believe that redundancy is built into the Internet, and that with multiple nodes, traffic can be re-routed to ensure that the network is always up. But, recent attacks on key nodes have shown that concerted attacks can succeed. The battlegrounds of the 21st century will include the Internet.

members, as well as the control centres, via a satellite hook-up. At the heart of the communication box is an Intel StrongARM RISC processor that runs Windows—in this case, Windows CE. The hook-up to the LAN is achieved through a wireless LAN card. Under battle conditions, messages can be relayed at 1.3 Mbps up to a range of 1.3 Km—research is currently on to raise the limit to 2 Mbps at 5 Km. The network traffic is encrypted using military grade encryption and authentication codes.

To find out just where the soldiers are located, the navigations system runs a military grade GPS receiver that tracks the precise geographical coordinates of all the warriors in action. Backing this up is an inertial navigation module that kicks in where the GPS satellite signals don't penetrate—such as deep inside a jungle or in city streets between tall buildings.

A big hiccup are power supplies, which have to be able to withstand combat conditions. Currently, cells have limited endurance and tend to be heavy. The Land Warrior system draws juice from

rechargeable lithium-ion batteries that can last a maximum of 8 hours, and a non-rechargeable backup battery that is good for an additional 12 hours. Undoubtedly, with the kind of rapid advances in fuel cell technology, batteries are going to get lighter and last longer. Finally, to ensure that none of these hi-tech gizmos land up in the wrong hands, soldiers or the control centre can effectively destroy everything at the press of a button.

Though it may be a tad disappointing, the networked soldier of the future will still go to war with his modified M4 by his side—and not a light sabre or a phaser set on stun. The M4 is a variant of the US Army standard-issue M-16A2 rifle. The main improvement in the design is the addition of the Thermal Weapons Sight system, a daylight camera, a laser

that has warm or cold air blown in through an intricate network of capillaries. The uniform will also come equipped with multiple physiological sensors that let the soldier, as well as medics and the control centre monitor vital signs— medics will know when a soldier is hurt, and further advancements may see them diagnosing his condition, while still on the way to his location. It has also been built to protect the soldier in chemically and biologically contaminated areas. Some radi-

The Stryker—Pouncing up f...

Deve ...ics, the Stry ...ell-wired

> ## Machines don't fight wars. People do, and they use ...
> The late Colonel John R Boyd

rangefinder and digital compass. The optics within the M4 will also be hooked up to the helmet mounted displays— super soldiers can sight and fire at targets anywhere, even around corners, and avoid getting their heads blown away.

The clothing that will be used by the soldiers is also going to change radically-in the Objective Force Warrior program, the uniform is a multifunctional device that works from the inside out. The suit comes with microclimate conditioning,

cal new advances in camouflage have resulted in technology that prevents detection from thermal imaging, locking in the body heat. With all this technology, the face of the infantryman in battle might transform from a blood, guts and cordite stained warrior into a super-geek.

Infantry...nah, I drive Armoured
One of the US Army's most eagerly awaited armoured combat weapons system is the Stryker or the 'smart battlefield taxi'.

armoured troop carrier that can carry up to nine infantry soldiers and has a crew of two. This selectively eight-wheel-drive, and full time four-wheel-drive, armoured combat vehicle offers unbelievable tactical mobility and traction over all sorts of surfaces. It weighs 19 tons, can speed up to a maximum of 62 Mph (about 100 Kmph). The Stryker comes with three unique touch-screen flat-panel displays that give its commander all the information that he needs—there is an electronic visor that shows the troops in the rear an enhanced view of what the driver sees. Think of it as an electronic control room that monitors squad-level intelligence as well as equipment. An onboard micro-Ethernet hub from Cisco, networks all this data. The Stryker gives the troop commander the rapidly updated battleground information that he needs to wage war

It's also well hooked up for TV—the Stryker's fire control is linked to powerful cameras that include day and night vision capabilities. Through it, the battlefield commander can sight and aim at targets, and give the command to fire any weapon, including 105 mm calibre heavy guns, a MK19 40 mm grenade launcher, and even guided missiles that have been mounted on the roof of the vehicle. This is just the sort of heavily armoured, rapidly deployable troop carrier that the US Army expects to use for highly localised conflicts.

JSTARS—Looking beyond to the other side and co-ordinating with ground-based units

Even more interesting is the focus towards an integration of forces. The Joint STARS (Surveillance Target Attack Radar System) program does just that. Joint STARS is a long-range air-to-ground surveillance system that is designed to locate and track all ground targets in all weather conditions within a 250 Km range. The program uses US Air Force E-8C aircraft along with US Army Ground Mobile Stations.

I Fly UAV

Around the world, militaries are developing new aircraft to replace the current generation of combat aircraft. These will be lighter, faster and have far greater range. With precision guided munitions and built-in BVR (Beyond Visual Range) capabilities, these will spearhead the move towards detecting and engaging hostile targets. An example of this is the still-under-development F-22 Raptor.

There is also considerable interest in UAVs or Unmanned Aerial Vehicles, which have been around for some time now—as UAVs have no humans on board they are considered expendable. The most eagerly awaited UAV is the Northrop Grumman's RQ-4A Global Hawk. Surveying 100,000 Sq Km in 24 hours, the Global Hawk's visual sensors can read magazine print from 65,000 feet away, even in bad weather—with the help of infra-red cameras, thermal imaging equipment and state-of-the-art synthetic aperture radar. It has a singular mission—to let military commanders access high-resolution, near real time imagery of large areas. It's smart enough to fly itself, though it does get human instructions from a control centre when taking off and landing. With a full tank of gas, the Global Hawk can fly for 36 hours; one Global Hawk went 12,000 Km across the Pacific from the US to Australia.

The Global Hawk—Electronic eyes in the sky

Air warfare is also going to change radically, perhaps over a longer period than with what we will see on land or at sea. But elements of the change are already in place. We've seen them with the 'televised' wars of recent times. Air power is increasingly making the first assault over enemy forces, first knocking out early warning systems and attacking infrastructure.

Launch the Manta…

There has been remarkable interest in undersea warfare, in which submarines are the most potent weapons. The US Navy's nuclear submarine fleet may arguably be the worlds most silent and deadly attack platform. But, even billion dollar submarines (each Sea Wolf class submarine costs $2.1 billion, and the upcoming Virginia class will cost over $1.65 billion per submarine) are still a deep-water attack platform. In coastal waters, these submarines are in grave danger. This is when the US Navy came up with a futuristic solution, based on the use of Autonomous Undersea Vehicles (AUVs). It's been code-named the Manta, and will be 20 to 30 meters in length. Still in the early stages of research and development, it is going to be very much

info 37 per cent of the weight of a soldier is accounted for by weapons and electronics, 63 per cent is accounted for by the clothing and individual equipment

at home in extremely shallow water.

The Manta is a robotic AUV that is designed to be anchored, with several other Mantas, on the body of a mother-ship. The mother-ship will launch Mantas from deep waters, and the Mantas will make their way to the shores. Communication between the two will be through an acoustic link. The Manta is designed to run as an observer, maintain a defensive patrol, and also run offensive operations right through narrow canyons up to local shore facilities. The really cool bit is that these Mantas will spawn swarms of even smaller robotic AUVs, and the smaller AUVs could spawn still other robotic drones and sensors, and so on. This may sound rather futuristic, but designers are already running sea trials on an early prototype.

Of Electrons and bullets

Even with all of these programs, war isn't going to change. But, the way we wage war is going to change dramatically. It is what the military calls the RMA, or the Revolution in Military Affairs, where the entire command and control structure is slowly changing to give the soldier, the airman and the sailor the tools to help triumph against all odds. It's not full-scale science fiction yet, but we are not too far off the mark. As an electronic warfare specialist in Afghanistan said, "We're shooting electrons, not bullets." **d**

SRINIVASAN RAMAKRISHNAN

Silent and lethal—The USN Seawolf, preparing to submerge and go to war

◀◀ **Sony Network Walkman digital music player NW-MS700**
Go digital

With 256 MB of in-built memory, Sony's Network Walkman can store up to 11 hours of music on its 2-inch frame. You can download music, rip it as CD tracks to the hard drive and then transfer them to the player via the USB port. A MagicGate Memory Stick Duo slot provides unlimited expansion when used with the tiny new media card.

Decibel
Delights

State of the art audio components to drown you in an ocean of music

◀◀ **BeoSound 9000**
Express yourself

BeoSound 9000 is an audio system from Bang & Olufsen that embraces CD, radio and digital music files. It comes in an aluminium and black colour combination, and can be placed in a large number of different positions—vertically, horizontally, upright or lying down, on the wall or on a stand. The control panel and the display change to suit your choice.

Creative TravelSound MP3 ▶▶
Symphony on the run

TravelSound is the first palm-sized, portable speaker with a built-in 32 MB MP3 player. It features two premium titanium drivers for clarity, and digital amplifiers for longer battery life. It has a built-in SmartMedia card slot that allows memory expansion to up to 160 MB.

Radio Shack 15-2133 Kameleon
Remote-control your life

The Kameleon is a remote control with an aqua-coloured, electro-luminescent backlight, broken up into controllable segments and then placed over a touch membrane layer. There are no hard buttons on this 0.69 inches thick remote. It only illuminates the set of keys needed to control each entertainment device.

Technics RP-FDA100
Pure eartopia

The RP-FDA100 has a two-way, double-drive speaker system—a large 57 mm Woofer and a 20 mm Tweeter—and full open-air design. It can reproduce the 3 Hz to 100 KHz ultra-wide frequency range used by DVD-Audio. It comes with a 10-foot detachable cord, and a freely adjustable headband for supreme comfort.

Sony Hard Drive Micro System CMT-L7HD
Sleek and talented

With an integrated hard drive, the CMT-L7HD provides storage capacity for up to 300 CDs. It can stand on a desktop, or be mounted on a wall. It also comes with a USB-type PC Link kit for easy control and editing of tracks on the 2.5-inches thick hard drive. It offers CD-R/RW playback capabilities. The slim-line speakers give 50 watts of power.

Computer Boom…
Environmental Bust!

In an age that worships faster computing and sci-fi devices, Mother Nature goes ignored. Here's how technology bytes its way into pollution

When the surge in computing power became apparent, it was thought that an industry, based on efficiency, was born. In the last couple of decades India has seen the installed base of computers rise from zero to millions. With the rapid progress of technology, most of these computers become obsolete in 2-3 years, adding to the pile of garbage on the street corner. This is an environmental nightmare just waiting to happen. This is further aggravated by the fact that little was known about technology, and establishing lifecycles for any product is difficult.

Researchers in current times have dissected the issue, resulting in a reality check for most people. This has also highlighted several other issues that were previously ignored.

Microchip pollution

The production of computer components requires hundreds of materials that are potentially harmful to the environment. The basic building block of any unit in your PC from modem to motherboard is the Printed Circuit Board (PCB). These boards are laminated boards on which various components are mounted. Circuit tracks are etched onto this board, which results in a hardwired circuit.

Silicon and Gallium Arsenide are the main materials used in the manufacture of these components. These components are then treated to adjust their electrical properties. Now, Silicon or Gallium Arsenide crystals are formed, which are then shaped and sliced to thin wafers. These are covered with multi-resistant chemicals. This step of the manufacturing process can pollute the surrounding environment. A process called doping is carried out using toxic gases, and an unsafe solvent is used to wash away the multi-resistant chemical.

The surface of the PCB must be kept clean using Chlorofluorocarbons (CFCs). The volume of chip production is extremely high. Together this means that chip production facilities use up a large amount of CFCs.

The effect of these processes on the environment is adverse—air and ground water pollution are the two obvious side effects. The use of CFC's depletes the ozone layer and the leakage of such solvents causes water contamination.

The amount of resources required to make a small memory chip is equally stunning. According to the research done by the United Nations University in Tokyo; the cost of a 2 gms memory chip with capacity of 32 MB requires 1,400 grams of materials—fossil fuels, chemicals and the raw materials. This is a ratio of about 700 times the material used for the chip, as compared to a ratio of 2 for cars. If 1,400 gms of materials does not seem much, think of the number of integrated chips used in a PC.

Major manufacturers, such as AMD and Intel, are implementing designs ➜

IMAGING: Atul Deshmukh

Water, Water Everywhere but not a Drop to Drink!

The most important resource of life is water. Unfortunately, this is true for the semiconductor business as well. Ultra-pure water is the most crucial component required for manufacture of semiconductor components and chips. The city of Austin, Texas is home to three semiconductor giants: AMD, Motorola and Samsung Austin Semiconductor. In the year 1999, Motorola used 1.78 billion gallons of water, AMD 1.18 billion gallons and Samsung used 353 million gallons. This is just a small example of just how thirsty microchips are. According to figures of Texas Instruments, the cost of designing a single fabrication in 1993 was 591 million gallons of water.

eventually be ingested by humans and animals. It is responsible for colic in children, and long-term effects of lead poisoning also include osteoporosis.

In certain parts of the world, CRT recycling centres have been set up that are catering to localised needs—including the US, UK and Singapore. The CRT recycling process mainly works on separating the heavy metals out of the other monitor wastes that can be disposed safely or recycled. Some systems process one tube every 3 to 5 seconds. The Andela CRT Recycling system is one such system. The main problem here is the dearth of CRT recycling centres in India. An ideal implementation is to make the manufacturer take responsibility of recycling.

Computer dumping

Computer dumping is n
place—a visit to a landfil

bished with a few minor repairs, such as wiping of disks and alignment of disk drives.

In India, dumping is yet to be seen on a large scale. This is partly due to the large market of used computer systems. Also, computer products are used for a significantly longer time in such a cost-conscious market as India.

A disturbing aspect of computer disposal is the dumping of PCs in third world or developing countries. The trade of toxic goods is banned by the international Basel Treaty. But the Basel Treaty does not focus on computing specifically and loopholes in the treaty can be exploited. Further, this treaty has not been ratified by the US. Thus, it provides an easy path to third-world countries, which recycle (read: reuse), the compo-
dia, China and Pakistan are the
porters of these components.

" The fruits of our high-tech revolution are p   se products are improperly disposed of at the end of their
›Te

such as lead-free computing, resource conservation and waterless processing. But to a large extent, the industry has done nothing about this resource hogging. The drive to increase performance has made people overlook this issue. The only solution is the development of better production facilities and standards.

Display pollution

Cathode Ray Tubes (CRTs) are the heart and soul of most display devices. While CRT screens provide reliable and safe performance throughout their operating life—as long as their outer structure is not damaged—the inner components of the CRT are quite hazardous. The most notorious component is lead. Monochrome monitors have 2 to 3 per cent of lead, whereas colour monitors have up to 28 per cent lead. The Department of Toxic Substances Control (DTSC), California has designated CRTs as a Universal Waste. It requires special procedures for proper disposal and recycling. The lead contained in the CRT does not harm the user during its lifetime as it is encased in glass. A small CRT may have up to 1.9 Kg to 3.8 Kg of lead. Larger CRTs have proportionally more amounts of lead. Lead leaking from improperly disposed monitors can find its way into ground-water, and may

depressing picture of what many refer to as a computer graveyard. The term used to define these wastes is e-waste. E-waste is a source for more than a thousand hazardous substances such as lead, mercury and beryllium. The rising amount of e-waste is also due to the fact that it is more cost-effective to replace damaged components than to repair them due to the rapid evolution of technology. Reuse is one of the most effective and often the most neglected facets of e-waste. Certain computer components can be refur-

Why do people import this scrap? The higher profit margin is the main reason. Unlike centres situated in first world countries, the recycling process does not have a high investment cost for the machines used. Trace elements of gold, silver and platinum are found in a typical computer. These precious metals are recovered and then sold at a high price in the market. The fact that is overlooked by most people is the environmentally lethal procedures that must be carried out in order to recover

The Devils Alchemy: What goes into your computer

The materials inside the ubiquitous white box have a concentration of materials, which are the sure shot recipe for bereavement·

Component	Health Hazard	Environmental Hazard
CRT	Silicosis, Inhalation of hazardous materials	Leaching of heavy metals such as lead or barium into groundwater. Possible release of toxic phosphor
PCB	Exposure to toxic substances such as tin and lead	Emission of toxic substances
Plastics	Exposure to heavy metals	Emission of heavy metals
Connectors	Exposure to Polycyclic Aromatic Hydrocarbons (PAH)	Emission of PAH hydrocarbons
Cartridges	Carcinogen exposure	Toner materials with varied toxicity

Source: Exporting Harm, SVTC.

them. **Where lies the responsibility**

A problem that can be much more ram pant than the pollution caused by displays or micro chips, is that of printer reusable products. Printer cartridges are discarded once they are used, and not much care is taken to provide proper facilities for their recycling. The cartridges contain chemicals that are extremely hazardous. Black toners contain substances such as carbon black that are carcinogenic and cause respiratory tract irritations. Also, colour toners(CMY) may contain heavy metal elements.

In the US and Europe, IT companies such as IBM, Dell and Intel have commitments to ensure environmental safety. However, there are no visible assurances in India. Clearly, environmental laws are a major factor in these efforts. For example, AMD maintains the goal of a lead free development program. In response to the deadline of July 1, 2006 set by the European Community. National Semiconductor has a detailed Corporate Environment, Health and Safety (EHS) policy. The company has recycling programs for process water, chemicals, lubricants, paper, packaging materials, and scrap products. The process water is used for irrigation or cooling. Chemicals are reused, or burned for energy. National Semiconductor also uses a method of recognising and rewarding employees for recycling programs. It has also issued various certificates for various processes, which come under scrutiny for safety of the environment. Intel also has a complete EHS policy, which entails the safety standards observed for all manufacturing process. They also address issues such as computer recycling—Intel has created an online product ecology centre, which can be accessed for information as regards computer recycling. The listings can be used to determine an effective way of disposing your PC. However, they do not provide India-specific information.

On the fifth of June, HP embarked on the Planet Partners Return and Recycling Program. The target is to eradicate the problem of cartridge dumping. The

*see offer on page 94-95

program will initially target its Most Valued Customers (MVCs), spread across a network of 42 cities and towns. Information about the program and the adverse effects of unsafe dumping is being sent to the MVCs via mailers or direct contacts. Parikshit Tomar, Marketing Manager of the supplies business of HP says, "HP is fulfilling its moral obligation to society. The services provided by HP will be absolutely free of cost." If MVCs have any interest in the program, the logistics team of HP periodically collects the used printer supplies and recycles them in proper facilities. HP also plans to develop its participant base in the future to accommodate the common customer. It is hoped that initiatives such as this will pave the way for a cleaner and greener technology roadmap.

olution to the growing problems of waste from the electronic world is still not clear. This is because the fact that electronic waste is very real, and becoming a large threat to the environment is ungraspable. The new age business cannot have a squeaky-clean image.

A move that could rapidly clean up the growing waste problem would be to identify and make manufacturing units responsible for the entire lifecycle of the product. When a product becomes defunct, the producer must not shirk its responsibility. If a corporation is made liable for its own products, it can use its economic power to effectively recycle its products. Also, since this model of recycling becomes product dependent, the manufacturer will be able to recycle the product with maximum efficiency.

AAYUSH IYER

How we Test

It looks good and the technology is glitzy, but does it do the job?

The Digital Media Test & Research Centre (DMTRC) conducts a series of elaborate tests to evaluate the merit of each hardware and software product. To ensure that our readers have all the information they need to make an informed buying decision, engineers at DMTRC evaluate and review the latest hardware, software and technology services in accordance with the most up-to-date evaluation processes and methodologies used around the world.

Comparison Tests

We use a dual rating system, the first of which is applied to the Comparison Tests in which we compare the performance of products within a particular category.

Each product is evaluated under different parameters such as performance, value for money, features, warranty and support, etc.

Weightages are then applied to the various test parameters according to their importance for that particular category of products.

These weightages are then used to arrive at an overall grade for each individual product. An overall grade of A+, therefore, indicates that the product is close to perfection.

Overall Grades

A+
A
A-
B+
B
B-
C+
C
C-

The Awards

Digit awards outstanding products by selecting a Best Performance and Best Value winner in each comparison test. The winner of the Best Performance Award will be the product that scored the highest in the performance segment of our tests. This award represents the best performing product in our tests and doesn't factor in any other parameter such as value for money, features, support, etc. The winner of the Best Value Award will be the product that scores the highest in our value for money parameter which is derived taking into account the ratio of a product's performance and features to its price. The product winning this award offers good performance at a great price.

In Bazaar

The second part of the rating system is used to evaluate individual hardware and software products in the Bazaar section. The evaluation covers parameters such as performance, ease of use, value for money and the build quality/features of the product in question and then arrives at an overall rating.

Here each of these parameters is given a weightage of 25 per cent and is rated on a scale of 5, which is represented by arrows (▶).

The greater the number of arrows, the better the product. This simple five-point rating system is designed to give you an easy-to-interpret assessment of a product. For example, a product that receives an overall score of five arrows signifies an outstanding buy!

The 5-point Rating System used in Bazaar

▶ ▶ ▶ ▶ ▶	**Excellent:** A brilliant combination of price, performance and features—far beyond expectations
▶ ▶ ▶ ▶ ▶	**Good:** A good buy, better than most products in its category
▶ ▶ ▶ ▶ ▶	**Average:** Reasonably competent but nothing spectacular about the product
▶ ▶ ▶ ▶ ▶	**Mediocre:** Does not live up to expectations, needs improvement in many areas
▶ ▶ ▶ ▶ ▶	**Poor:** has serious drawbacks and needs improvement before it can be used for its target application

In Test this Month

This month, delight yourself with the best display in town. Here's a mammoth test comprising of 14 CRT and 23 LCD monitors. LCD monitors are a good deal for those who do not want to take up much desk space. Of course, there is always the 17-inch and the 19-inch CRTs that are economically viable. Variety is the flavour of the month in Bazaar. Keeping that in mind, we appease the appetite of the audiophile by reviewing Bose Mediamate Speakers. Also served up is the Apacer Audio Steno and the striking Apple iPod MP3 player that comes with a huge 30 GB drive to dump your favourite numbers into. Wanna go mobile? Check out Samsung and Phillips' latest offering.

Also reviewed is the Seagate's latest offering-the Serial ATA 80 GB drive. Take a look at the CD-RWs that might just lure you into buying them. For the tech savvy, we have the DigiCard Holder, the Sony CLIE handheld and a desktop laptop! What's more! Take a look at how e-Monitor and e-Monitor Pro helps you to catch the Judas in your organization!
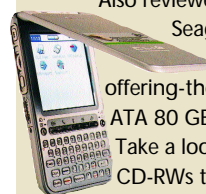
Dream
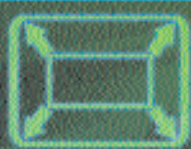
Screens

Everyone wants to enjoy breathtaking and dazzling graphics of their favourite movies on their PC monitor. Entertainment and multimedia are driving forces that are changing the capabilities of the humble computer display.

The market for Cathode Ray Tube (CRT) monitors and Liquid Crystal Displays (LCDs) is on the rise, with manufacturers tweaking the interface for more comfort and user friendliness. With big brands falling all over themselves to the consumer's heart and wallet, soon you may have to make the choice between a TV and a computer. And with the new range of monitors comming with remote controls, the TV is surely on its way out. And not only is it vying for the space occupied by the TV, with its USB ports, the new LCDs and CRTs are also showing the Mac the door.

How we tested

The monitors were tested keeping in mind the performance, features, value for money and the warranty offered.

Performance: We used the Display Mate benchmarking software to gauge a monitor's performance. This software uses images to test a monitor for criteria such as geometrical accuracy seen in the instance of parallel lines. This aspect is especially important in applications where accurate geometric shapes need to be generated like in CAD and CAM software.

Another important factor to consider is the ability of the monitor to hold a stable shape of images. Sudden changes in brightness levels occur—like when you are watching a movie—can create distortion. This leads to eyestrain and is caused when the monitor lacks the precision to prevent adjacent pixels from lighting up.

In the sharpness and resolution set of tests, we tested the image sharpness offered by the monitor and the resolution it displayed pictures clearly at. Another check point was if, while watching a movie or a moving object, the screen displayed the object with same sharpness across the screen, as it did in the centre.

We also evaluated the ability of a monitor to generate perfect lines (including vertical, horizontal and diagonal), circles and various other geometric patterns. Even the highest resolution systems show jagged lines, inability to discriminate between closely spaced lines and object fusion or merging of pixels.

The colour and grayscale test helped gauge how well the monitor is able to reproduce colour, as well as any type of ghosting and streaking that might happen with different colour shades, brightness and contrast. It also checked for overlapping of darker or lighter shades on other colours. This test had the highest number of sub-tests (nine) as well as the highest weightage.

A few tests other effects such as the uniformity of the display and a flicker test were also carried out. In the flicker test, a white background was displayed by the test utility, and the monitor was run at different resolutions to see if it flickers. The Defocusing, Blooming and Halos test, told us how much thicker an object will look than its darker counterpart.

The pixel persistence test was run specifically for the LCDs to check for jerks or image blurring. Another LCD-specific test was the viewable angle test. Unlike CRT monitors, when you view an LCD screen from an angle, things are not as bright and clear as with a straight view. A document containing different fonts was viewed from various angles, thereby letting us determine the angles at which the object still looked crisp and sharp.

Features: In the features test we looked for value-additions and other aspects which aimed at increasing the user-friendliness of the display. The features noted varied in their significance—somethings as simple as the clarity of the fonts on the OSD (On Screen Display) and the prescence of energy saving features that can be enabled from the BIOS. Other

things duly noted and suitably awarded where whether the symbols on the settings buttons were self-explanatory, allowing the user to adjust the settings without consulting the user manual; the presence of Back and Forward keys for the selection of different menus. These can be great advantage when you enter a wrong menu and can get out of it, just by pressing the Back button, instead of being forced to go through the entire menu. The latest monitors come with integrated speakers—some have the speakers built into the same casing, while others are detachable. The monitors that came with their own set of speakers earned more points.

An important matter was that of the monitor base that decided the tilt of the monitor—the more the tilt, the better. The grip of the display was also checked. In the case of LCDs, those that could be wall-mounted afforded more convinience, and hence won more accolades. Since most monitors and graphics cards will be shifting from the VGA cable to the DVI output in a few years, monitors with a DVI output were preferred. The height adjustment of the monitors decieded if the displays could be adjusted for maximum comfort. Some LCDs can be rotated vertically—landscape to portrait—this can be boon while reading long Word files or PDFs without the aid of a scroll-wheel mouse.

An often overlooked feature is the user manual. This mandatory piece of documentation was dissected to see the level of details it c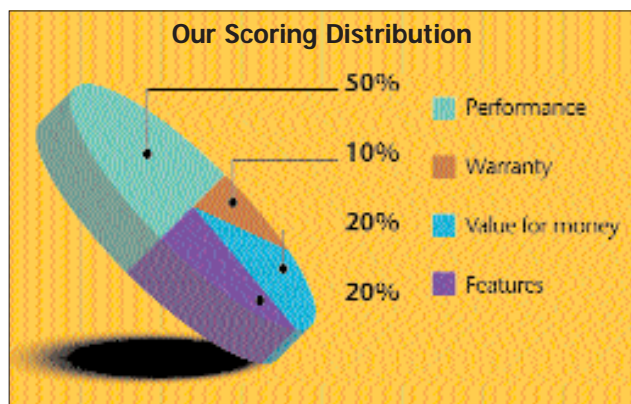ontained, if it used diagrams to aid the explaination of the different menus, buttons and functions. It is also helpful if the manual states the technical specifications of the monitor clearly.

Our Scoring Distribution

- 50% Performance
- 10% Warranty
- 20% Value for money
- 20% Features

CRT Monitors

Test Analysis
17-inch Monitors

The BenQ G774 comes with four blue buttons on its front panel that help in adjusting the OSD menu. This monitor has a bandwidth of 110 MHz, resulting in a flicker free display and supports a highest resolution of 1280 x 1024 at 67 Hz—however, it does not come with a full and flat picture tube (F&FST).

The OSD is quite intuitive and self-explanatory; the buttons are conveniently placed, and offer ease of use along, with a good OSD menu structure. The monitor is a bit bulky and on the heavier side, but comes with a sturdy swivel base with a small foot print. It comes in a plain vanilla package, and does away with any extras such as USB hubs, speakers or multimedia—an optional USB hub can be purchased separately. It has the requisite manuals and driver disk for installation.

The Samsung Sync Master 753 DFX monitor comes with F&FST, making it an absolute delight to use. The monitor has four buttons on its front for adjusting the various OSD settings, which is intuitive and simple to use.

The latest release from Samsung, the 763 MB, sports an absolute flat screen. The 'MB' stands for Magic Bright, which automatically adjusts the brightness of the monitor according to the application you are using. It has the options of Text, Inter-

Important Standards for Displays

In the world of today, where the usage of computers has increased tremendously, and computing has seeped into almost all industries, prolonged usuage is bound to have its repercussions. But have you ever bothered to find out if your monitor complies with the safety norms? Given below is the history of various safety standards that have been accepted by monitor manufacturers.

In 1980, Swedac, a Swedish testing company expressed concern over possible health issues related to monitor, and also about its ergonomics and emission levels. After taking these into consideration, they drew up a standard called the MPR1 [FULL FORM]. Then in 1990, this standard was amended, and a new standard called MPR2 was to be exercised by all the monitor manufacturers. MPR2 ensured a reduction in the emission level, and also a conductive coating on the monitor screen.

A newer standard called TCO92 was invented in 1992 by the Swedish Confederation of Professional Employees. Unlike the MPR2 level, here the emission levels of the monitor were decided by the manufacturers themselves. This standard sets far stiffer levels of emission and required monitors to meet the international EN60950 standard for electrical and fire safety. [HUH? CONTRADICTORY].

In 1993, VESA started a new standard called DPMS (Display Power Management Signalling), which set the four monitor modes—on, standby, suspend and off—at user-defined periods.

Simultaneously in 1993, EPA Energy Star; a power saving standard was made compulsory in USA and was also adopted across Europe. Even though this standard was initiated in 1993, it wasn't implemented till the year 1995.

In 1995, TCO again modified its standards, changed the requirements for visual ergonomics and added a range of conditions to cover environmental issues, including the use of certain chemicals in manufacturing and the recycling of components. TCO95 became the first global environmental labelling scheme. It was more comprehensive than the German Blue Angel label, and more exacting than ISO international standards.

TCO99 is the latest iteration of the standard. It doesn't change the emission levels from the previous versions, but does alter the testing procedures to deal with certain loopholes. This new approval mainly concentrates on improving the visual ergonomics requirements that include better luminance uniformity and contrast. There is also a new requirement that the screen colour temperature adjustment, when present, should be accurate. To reduce eye fatigue caused by image flicker, the minimum refresh rate is increased to 85 Hz for displays of less than 20-inches, with 100 MHz recommended, and a minimum of 75 Hz for diplays measuring 20-inches, or greater.

net and Entertainment menus that can be accessed using the Magic Bright button on the front panel. There is also the Highlight button that ensures clear images on the screen while video-conferencing, by highlighting areas that emphasise the overall clarity of the picture. The OSD is very easy to use and is well-complimented by seven buttons that make browsing through the menu a breeze. It bundles an exhaustive user's manual and a quick-start guide, along with the driver CDs and colour profiling software. For added functionality, you have an optional USB hub and multimedia speaker stand thrown in.

The LG Studioworks 700S was the lightest monitor that we received. The factor that differentiates it from the LG Flatron E 700S is the much-appreciated fully flat tube. The MV7500 17-inch monitor from Compaq was the best looking monitor in the comparison test. With a dual tone paint finish—a gorgeous opal front bezel and a black carbon finish—this monitor has the edge when it comes to aesthetic appeal. Its OSD menu is icon-based, with just three buttons for configuring the various parameters of the monitor. The slightly large blue power button lends a good character to the otherwise plain front panel. It has a conventional FST (Flat Square Technology) picture tube with no anti-glare or anti-static coating, which is the only chink in its armour. The monitor comes with detachable JBL platinum speakers, a colour management software and all the other necessary cables and guides.

19-inch monitors

The BenQ V991 comes in a white body shell, and is complimented by four easy-to-use blue buttons and a large prominent power switch on the front panel. The highlight of this monitor is the resolution, which can go up to 1600 x 1200 at 78 Hz. The monitor comes with an anti-glare and anti-reflective coating, making it a sight

that won't cause sore eyes.

This monitor was quite a performer, battling to the top of almost every test we threw at it. Its results in the geometry and the sharpness and resolution tests were especially good, making it stand out among the crowd. The only downside was that the entire package had no extra additions, such as USB hubs or speakers— which could have provided value added enhancements for the monitor, in the absence of a full flat picture tube.

The 955DF comes from the Samsung's professional monitor series which claims to be feature-rich, and at the same time, performs to the brim. This monitor, based on Samsungs Dyna Flat technology was one of the fully flat 19-inch monitors that we received. The monitor is well designed, moulded to hide bulk of the 19-inch monitor. The front panel is home to nothing but the power switch; all the other controls are hidden by a pop-open flap panel. Despite such entrappings, the buttons were unobtrusive and easily accessible.

The 900B from LG belongs to the standard revamped Studioworks series and hence, does not offer a full flat picture tube. It is designed to be practical, with a six-button, easy-to-use OSD menu. The monitor is capable of displaying a resolution of 1600 x 1200, but at a respectable frequency of 75 Hz. It is a good buy for its price of Rs 14,990, and has the usual cables, guides and warranty card.

NEC's MultiSync 95 sports the usual monstrous looks of a 19-inch monitor with a contemporary design that lacks aesthetic appeal. The monitor has a decent OSD menu that can be accessed through the three buttons provided on the front panel. A commendable aspect of the MultiSync 95 is the excellent resolution at which it can be operated—it is capable of displaying a resolution of 1600 x 1200 without any flicker. It comes bundled with the usual stuff such as users manual, colour profile

The evolution of display technology

1897: First CRT scanning device constructed by German scientist, Karl Ferdinand Braun

1905: Nipkow disc and CRT is demonstrated

1923: Zworykin patents the Iconoscope pickup tube for television. The complete TV system, including kinescope, or picture tube is demonstrated

1950: Ben Laposky uses oscilloscope to display waveforms that were photographed as artwork

1963: George H Heilmeier and Richard Williams publish a report suggesting the use of liquid crystal materials for display

1964: IBM 2250 console worth $125,000 is introduced with the IBM 360 computer

1965: Tektronix Direct View Storage Tube (DVST) is introduced

1968: The Tektronix 4010 is released

1968: Sutherland Head Mounted Display (Sword of Damocles), developed in 1966, is shown
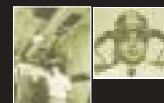
1971: An improved Liquid Crystal Display is invented by James Fergason

1971: The first 'touch sensor' is developed by Dr Sam Hurst

1979: IBM 3279 colour terminal introduced

1981: IBM introduces 4-colour monitor

1987: VGA (Video Graphics Array) invented by IBM

Benq G774
+ High refresh rates
- Heavy

Compaq MV 7500
+ Good overall performance; includes external speaker set
- No antiglare coating; expensive

HCL HCM780M
+ Economically priced
- Poor performance overall

HCL HCM785 RFM
+ F&FST; fine dot pitch
- No antiglare coating

LG Flatron E700S
+ F&FST
- Poor performance in the Geometery test

Colour Profiles

You may have bought a new monitor, but are aware you need to assign the right colour profile to it? The purpose of colour profiling your computer is to reproduce accurate colours from one device to another, by mapping each device's colour gamut. When done correctly, this means that the photo you scanned will be displayed as accurately as possible by your monitor, and printed just as accurately by your printer. This process will never be perfect, as each device has certain inherent limitations on its level.

You have a system RGB colour profile, such as Adobe 1998 RGB. This is the basis of all the other colour management on your computer; all other devices look to this to display proper colour. Your monitor should have a profile created by the manufacturer. The same applies for your scanner, printer and any other device that uses colour. Any file you open will be checked to see if it has a colour profile attached, and whether it should convert the colour to your profile,

keep the old one, or assign one to it, incase it does not have one.

Monitors should be set manually, using your eyes as the best judge and not the monitor profile. This is because every user has different preferences, and the room lighting will also affect the display. You can calibrate your monitor to your eyes by using Adobe gamma, a utility that comes with your monitor, or programs such as Colorific. However, if you are not the only one using your computer, this may be a problem. In which case you can save multiple profiles and re-use them accordingly.

Since monitors are easily adjustable, they are also wrong most of the time. You may have increased brightness for a game, or a power outage may reset your settings, in which case the display will be radically different to what your printer prints. Monitors also succumb to age, the electron guns age at different rates and affect the colour balance.

results when generating parallel lines patterns in the Distortion tests.

Another impressive performer was LG Studioworks 700S, which showed very little image distortion and stood third only because of some variation in the dimensions during the screen regulation tests.

BenQ V991 and LG Studioworks 900B, both topped this test in the 19-inches category, by logging a score of 26.75. Thus, they are ideal for graphic and Web designers who have to deal with lot of vector diagrams and animations. Samsung Synmaster 955DF stood second with score of 16.5 points.

NEC MultiSync 95 was the worst performer with a score of only 16 points—this was due to the poor performance in all the regulation tests. With respect to the price criteria, NEC MultiSync 95 was the lowest costing Rs 17,000. However, its performance was not acceptable, and definitely not recommended for professionals.

For the sharpness tests, Samsung SyncMaster 763MB came first, scoring 22.5 points, as it performed exceptionally well in most subtests,except for a few such as the horizontal bar resolution test. On the other hand, Compaq MV 7500 scored 21.75 points. Hence, people who need high resolution to work with 2D or 3D engineering drawing, should opt for the Samsung SyncMaster 763MB. The monitor which finished at the bottom in this test was the NEC MultiSync 75 that suffered in all seven sub-tests, taking a maximum beating in the horizontal bar resolution test.

In the 19-inch category, BenQ V991 emerged as the winner, scoring 23.25 points. It performed well in all the tests, although it did take a beating in the diagonal resolution and fine resolution matrix test. NEC Multi Sync 95 and Samsung Syncmaster 955DF were poor performers, and came last due to their average performance in all the resolution tests.

CD, drivers CD, etc. and does not provide any additional multimedia features.

Performance

The Geometry test was the main evaluator of the the monitor's capabilities. Displaymates' internal pincushion and Barrel distortion test is done to rate the accuracy of the geometrical shapes produced. The screen doesn't wrap the raster from corner to corner, and hence the screen corners are cut or show the black background. This can be irritating when working with applications such as image editors. This test helped wrap the screen to the raster perfectly, to eliminate the geometry distortion and provide the maximum screen area. In the 17-inch category, Microtek 43F1 and LG E700S disappointed us by yielding below average

results in four image regulation tests—except for the Pincushion and Barrel distortion test—and the variation in the size and shape of the test images was drastic. These monitors tend to show a variation in screen size while toggling between two Word documents or Excel sheets.

The Compaq MV7500 shone in the Geometry tests for the 17-inch category. It had an impressive overall screen geometry score of 22.5. This was 2 points ahead of its nearest rival, the Samsung SyncMaster 753DFX that scored 20.5 points. This performance was largely due to the impressive scores in the regulation test, where there was hardly any changes in the size and shape, and no perceptible clipping of the screen when brightness levels were suddenly increased. Surprisingly, the monitor gave only average

LG Studioworks 700S
+ Overall good performance; light weight
- Flimsy construction

Microtek Flatvision 43F1
+ Good looking
- Average overall performance; no antiglare coating

NEC Multisync 75
+ Good refresh rate
- Bulky; Semi-tint coating

Samsung Syncmaster 753DFX
+ F&FST; good performance overall
- NA

Samsung Syncmaster 763MB
+ F&FST, Magic Bright feature
- A tad expensive

There was a tie between two monitors—the Compaq MV7500 and the BenQ G774; both scoring 4.25 points in the Screen pixel resolution tests. The LG E700S came a very close second, scoring 4 points. The NEC Multi Sync 75 showed poor performance here again—a lot of jaggedness, as well as merged pixels near the intersection of two lines were noticed.

In the 19-inch category, LG Studioworks breezed through the test, scoring a perfect 5. BenQ V991 came very close by scoring 4.5, while NEC MultiSync 95 and Samsung SynMaster 955DF both stood last, but scored a respectable 4.25 points.

For the Colour tests, the 17-inch Compaq MV 7500 was a clear winner as it breezed remarkably through all the tests, including ghosting and streaking. LG Studio Works 700S came second with a good performance in most tests—except for its average performance in the colour streaking one. The Microtek 43F1 had a below average performance—we could distinctly notice the streaking and ghosting, and the colour red was not uniform in the colour purity test.

Moving on to the 19-inch category, BenQ V991 emerged as the winner because we could barely make out any sort of streaking and ghosting. The LG Studioworks 900B lost the race only due to slight ghosting and streaking. NEC Accu-Sync 95 F was the only monitor which did not perform well. It displayed streaking and ghosting, and logged an average score in the colour purity test.

In the Miscellaneous Effects test, the LG Studio Works 700S won in the 17-inch category by scoring 19.75. The BenQ G774 stood second with a respectable score of 18.5, and the Compaq MV 7500 came very close with 18 points.

Compaq lost because of its extremely poor performance in the dark screen test, whereas the BenQ lost because of its average performance in the Screen Uniformity test. The HCL HCM 780 stood last as it performed badly in the trio of Dark Screen, Screen Uniformity and Defocus Blooming halos tests.

In the 19-inches category, BenQ V991 was the top performer and scored an astounding 17.5. Except in the Dark Screen test, it performed brilliantly in all the tests. The Samsung SyncMaster 955DF came in second, with a score of 16.75 points. It lost out due to its average performance in the CRT Shadow Mask Distortion test. The LG Studio Works 900B came last owing to its below average performance in the Screen Uniformity, Defocus Blooming and Halos tests.

The clear picture

It was a well-fought out battle between the brands dominating the Indian scenario, with a proper photo-finish race.

The 17-inches category saw the maximum number of monitors—a total of 10 monitors, representing seven different brands. The winner was undoubtably, the Compaq MV 7500, costing Rs 13, 500, which puts it out of reach for home users, but within the scope of professionals. The best monitor in the price-performance slot was the LG Studioworks 700S. This monitor costs only Rs 7,450—its low price and admirable performance make it the preferred choice of users across the board—be it the home user, the office user or even gamer.

The 19-inches category crowned the BenQ V991, which scored 38.9 in the performance test as the fitting winer. This monitor produced impressive results in all the tests in our evaluation. The BenQ V991 is best suited for graphic applications, multimedia authoring and other high end 3D applications. It also won the best value award because of its extremely competitive price of Rs 12,999.

Benq V991
+ High refresh rates; very good performance
- Low on features

LG Studioworks 900B
+ Support for highest video bandwidth
- Poor performance in Screen Uniformity test

NEC Multisync 95
+ High refresh rates
- Semi-tint coating; expensive

Samsung Syncmaster 955DF
+ F&FST
- Low refresh rate; Heavy

CATEGORY	17" CRT			
Brand	Benq	Compaq	HCL	HCL
Model	G774	MV7500	HCM 780M	HCM 785 RFM
Size (Inches)	17	17	17	17
Viewable (Inches)	16	16	16	16
F&FST	✘	✘	✘	✔
Dot Pitch (mm) (Diagonal)	0.25	0.28	0.27	0.21
Vertical Scan Rate (Hz)	50-120	50-140	50-160	50-160
Horizontal Scan Rate (KHz)	30-72	30-70	30-70	30-72
Maximum Resolution/Refresh Rate	1280x1024@67 Hz	1280x1024@60 Hz	1280x1024@60 Hz	1280X1024@60 Hz
Video Bandwidth (MHz)	110	110	NA	NA
CRT type	Shadow Mask	Shadow mask	Shadow Mask	Shadow Mask
W x H x D (mm)	406 x 423 x 412.5	432 x 422 x 444.5	410 x 402 x 420	410 x 402 x 420
Weight (KG)	16.4	17.23 kg	15.5	16Kg
Built in Speakers	✘	✔	✘	✘
Anti-Glare Coating	✔	✘	✔	✘
Emission Standard Followed	MPR II, TCO 99 (optional)	Energy Star compliant	Energy Star	MPRII
Bundled Accessories (Manuals, Colour Profile, Driver and Calibrating software…)	Manual, power cable	power cord,captive signal cable, JBL speakers with audio cable,	Monitor stand, Driver Floppy, User Manual, Power cord	Manual, driver floppy disk.
Performance (50%)				
Geometry test(Scale of 30)	19.5	22.25	17.5	16.5
Sharpness and Resolution (Scale of 35)	21.25	21.75	20.75	21
Screen Pixel Resolution (Scale of 5)	4.25	4.25	3.75	3.5
Color and Gray Scale (Scale of 45)	31.25	38.75	29.25	28.5
Miscellaneous Effect (Scale of 25)	18.5	18	15.25	16.5
Overall 50 % (performance only)	33.92	37.128	30.802	30.642
Overall 20 % features only)	12	12	5	10
Overall 20 % Value for Money	14.41674419	9.8256	14.3208	13.716675
Overall 10 % warranty and support	10	4	4	4
Warranty and Support				
No. Of years/Type of warranty	3 years/onsite	1 year/carry-in	1 year	1 year
Overall Product Score	70.33674419	62.9536	54.1228	58.358675
Ranking	🅐	🅑	🅒	🅓
Vendor Details				
Contact	Benq India Pvt Ltd	AVI Electronics	HCL Infosystems Ltd	HCL Infosystems Ltd
Phone	022-25705231	022-26465522	044-22340165	044-22340165
E-mail	salesenquiryin@benq.com	aviteam@vsnl.com	kiruba@hclp.com	kiruba@hclp.com
Web site	www.benq.co.in	www.hp.com	www.hclinfosystems.com	www.hclinfosystems.com
Price (Rs)	8,600	13,500	6,750	8,000

Compaq MV7500

The Compaq MV7500 monitor is an affordable and practical 17-inch CRT solution that offers excellent performance in a sleek new carbon and silver casing. This monitor is ideal for everyday home and office activities such as Web surfing, gaming, e-mail and working with office suite software. The 110 MHz pixel clock speed, .28mm dot pitch and refresh rates of 30 to 79 KHz (horizontal) and 50 to 140 Hz (vertical) ensures sharp visuals. The Compaq MV7500 monitor also boasts of a variety of features that make it ideal for everyday use. The monitor is incredibly easy to set up and maintain, with a wide range of icon-based on-screen controls, so you can customise brightness,

colour contrast, and other features to match your preferences. This monitor features a detachable set of JBL Platinum series speakers and also has the Coloreal colour management software bundled— which lets you calibrate your monitor to perfection. The monitor's tilt-and-swivel features let you adjust the positioning of the unit according to their individual needs. This feature is especially useful when surfing the Web with friends or gaming with multiple players.

On the performance front, it gave some outstanding numbers and stood first in three of the five main performance tests we ran.

17″ CRT					
LG	LG	Microtek	NEC	Samsung	Samsung
700S Studioworks	E700S	Flatvision 43F1	MultiSync 75	SyncMaster 753DFX	SyncMaster 763MB
17	17	17	17	17	17
16	16	16	16	16	16
✗	✔	✗	✗	✔	✔
0.27	0.25	0.28	0.27	0.2(H)	0.2(H)
50-160	50-160	50-120	55-120	50-160	50-160
30-70	30-70	30-70	31-70	30-70	30-70
1280x1024@60 Hz	1280x1024@60 Hz	1280x1024@60 Hz	1280x1024@66 Hz	1280x1024@65 Hz	1280x1024@66 Hz
110	110	110	NA	110	110
Shadow Mask	Shadow Mask	ShadowMask	Shadow Mask	Shadow Mask	Shadow Mask
400 x 395 x 420	400 x 395 x 424	406 x 404 x 423	403 x 420 x 418	398 x 400 x 412	398 x 412 x 400
14.4	16	15.5	15.4	15.7	16
✗	✗	✗	✗	✗	✗
✔	✔	✗	Semitint	✔	✔
MPR II	✔, MPR-II Low-Emission Compliant	MPR II	MPR II	TCO 99	TCO 99
power chord, signal cable, manual, install disk	Manual, Driver (floppy), power cable	Users manual, captive signal cable, swivel base, power cord,	Manual, power cable	power cable, manual, signal cable	Users manual, colour profile CD, power cord
19.75	13	12	14.25	20.5	18.25
19	21.5	20.5	18.5	20.25	22.25
3.5	4	3.75	3	3.5	4
33.5	30.75	30.25	28	30	32.25
19.75	17.25	16.5	16.25	17.75	16.25
33.97	30.537	29.199	28.322	32.957	33.009
10	10	8	7	11	10
15.93543624	11.64360638	13.949625	14.67221538	13.1871	12.09628125
10	10	8	4	10	10
3 years/onsite	3 years/onsite	3 years carry in	1 year/carry-in	3 years/onsite	3 years/onsite
69.90543624	62.18060638	59.148625	53.99421538	67.1441	65.10528125
LG Electronics India Pvt Ltd	LG Electronics India Pvt Ltd	Microtek Intl Ltd	Moon computer Manufacturing Industry	Samsung Electronics India Information & Telecommunication Ltd.	Samsung Electronics India Information & Telecommunication Ltd.
0120-2560900	0120-2560900	022-28362406	022-22653390	011-51511234	011-51511234
response@ lgezbuy.com	response@lgezbuy.com	an.bom@mtk.sril.in	sales@moonindia.com	marketing@ samsungindia.com	marketing@ samsungindia.com
www.lgezbuy.com	www.lgezbuy.com	www.microtek.com	www.nec.com	www.samsungindia.com	www.samsungindia.com
7,450	9,400	7,200	6,500	9,000	9,600

CATEGORY	19" CRT			
Brand	BenQ	LG	NEC	Samsung
Model	V991	Studioworks 900B	MutliSync 95	SyncMaster 955DF
Specification and Features of 17" Monitors				
Size (Inches)	19	19	19	19
Viewable (Inches)	18	18	18	18
F&FST	✗	✗	✗	✔
Dot Pitch (mm) (Diagonal)	0.25	0.26	0.26	0.2(H)
Vertical Scan Rate (Hz)	50-160	50–160	55-160	50-160
Horizontal Scan Rate (KHz)	30-98	30-124	31-96	30-85
Maximum Resolution/Refresh Rate	1600x1200@78Hz	1600x1200@75Hz	1600x1200@76Hz	1600x1200@68Hz
Video Bandwidth (MHz)	115	203	145.92	135
CRT type	Shadow Mask	Shadow Mask	Shadow Mask	Shadow Mask
W x H x D (mm)	455 x 466 x 463	448 x 470 x 454	442 x 452 x 455	440 x 461 x 460
Weight (KG)	20	20.5	20	21
Built in Speakers	✗	✗	✗	✔
Anti-Glare Coating	✗	✔	Semitint	VESA DPMS, Energy Star, NUTEK
Emission Standard Followed	MPR II, TCO 99 (optional), CE (optional)	TCO 99	MPRII	MPR - II
Bundled Accessories (Manuals, Colour Profile, Driver and Calibrating software…)	Manuals.	Manuals, driver CD, cables.	Users manual, captive signal cable, swivel base, power cord,	Manual, WarrantCard, signal cable, power chord, CD with drivers, installation guide booklet, Natural color management system booklet,
Performance(50%)				
Geometry test(Scale of 30)	26.75	26.75	16	16.5
Sharpness and Resolution (Scale of 35)	23.25	18.5	17.5	17.5
Screen Pixel Resolution (Scale of 5)	4.5	5	4.25	4.25
Color and Gray Scale (Scale of 45)	36.5	29.75	25.5	30.5
Miscellaneous Effect (Scale of 25)	17.75	14.5	15	16.75
Overall 50 % (performance only)	38.938	34.32	28.13	30.422
Overall 20 % features only)	3	8	6	6
Overall 20 % Value for Money	14.44	12.89	9.44	8.29
Overall 10 % warranty and support	10	10	4	10
Warranty and Support				
No. Of years/Type of warranty	3 Yrs/Onsite	3 Yrs/Onsite	1 year/Carry-in	3 Years/onsite
Overall Product Score	66.38157258	65.21012875	47.56617647	54.71369231
Ranking	⊕	⊕	⊕	⊕
Vendor Details				
Contact	Benq India Pvt ltd	LG Electronics India Pvt Ltd	Moon computer Manufacturing Industry	Samsung Electronics India Information & Telecommunication ltd.
Phone	022-25705231	0120-2560900	022-22653390	011-51511234
Email	salesenquiryin@benq.com	response@lgezbuy.com	sales@moonindia.com	marketing@samsungindia.com
Website	www.benq.co.in	www.lgezbuy.com	www.nec.com	www.samsungindia.com
Price (Rs.)	12,999	14,990	17,000	19,500

LG Studio Works 700S

The LG Studioworks 700s Monitor can be yours at a relatively low cost. It has a flat outer screen, is user-friendly and delivers good picture quality. The OSD menu was clear and easy to operate, and the button placement was logical. It also has an anti-glare coating to shield the strain on your eyes. It was also the lightest monitor that we received in our comprison test.

On the performance front, it stood second amongst the rest of the brands in its category. This monitor is ideal for home users who want good performance at a rock bottom price.
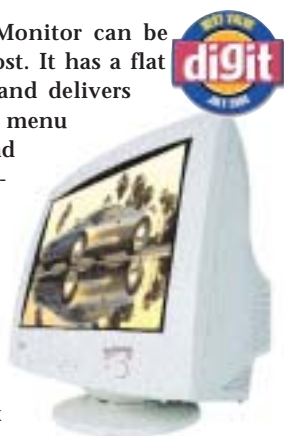
BenQ V991

The BenQ V991 is a 19-inch flat-screen CRT with a viewing expanse of 18 inches. Its highest refresh rate gives flicker-free images for pleasant viewing. The diagonal dot pitch is set at an ultra-fine 0.25 mm, and it also has an iScreen OSD control for instant adjustment to the most suitable settings.

The BenQ topped four out of our five tests. This monitor is ideal for page layout artists and those who use a lot of geometric drawings, given its crisp images with minimal amount of jaggedness, even at high resolutions.

Its three-year on-site warranty is the clincher, as users can have peace of mind after buying this monitor. The on-site warranty assures that you will never have the headache of carrying this monitor to a service centre, in the rare even of a component failure.
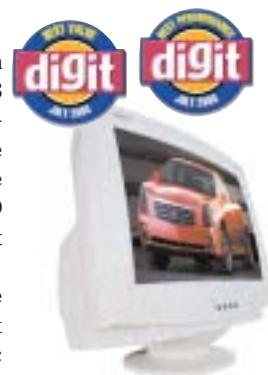
LCD Monitors

LCDs are fast becoming the display solution of choice for most offices, due to their size, elegant looks, and the fall in prices over the last couple of years.

LCD prices have dropped 25 per cent in the last one year or so. Due to this, some major PC vendors have started bundling LCDs with their PCs, particularly Zenith, HP and HCL. This has created more awareness amongst the buyers, and caused more vendors to jump the bandwagon—D-Link, Umax and CMV have launched their monitors in the past few months. Certain brands, such as Sony and Acer, have pulled out of the CRT segment altogether, and are concentrating solely on LCDs.

The entry level LCDs are available at a price tag of Rs 18,000 upwards. Sharp has a large product range with around 17 monitors catering to all kinds of users ranging from Rs 24,000 for the home segment, to Rs 1,00,000 and beyond for the money-is-no-object segment.

How we tested

In the LCD comparison test, we again evaluated the performance, features, value for money and warranty details. The performance was evaluated using the same tests as the CRTs. LCDS were additionally tested for jerks or image blurring. We also looked for features such as the various accessories bundled, the design, look and feel, the placement of buttons, whether one could adjust the height, and other little extras—such as USB ports, DVI connectors etc.

15-inch monitors The Sync Master 152S was one of the most elegantly designed LCD monitors in the test, with a choice of silver, or carbon black colours. We received a silver LCD monitor, and it blew the competition away in the looks department. The front face has five buttons for configuring the screen and using the OSD, and also an auto configure button. This monitor can be wall mounted, and also comes with an adjustable height stand. Various accessories, such as a power adapter, colour calibrating software and wall mounting accessories are bundled with it. The only sore point was the absence of DVI support. At 2.9 Kg, it was the lightest monitor in its category.

On the other hand, the AL 511, which is the latest offering from Acer, was the cheapest in the entire 15-inches LCD category. The design is very simple, with a white plastic body. The OSD menu is quite detailed, with lot of options, but is too complicated to use. The AL 511 lacks many features, such as built-in speakers, wall mounting and height adjustment—but it has a 60 degree tilt angle for easy viewing. Also at 3.2 Kg, it was one of the lighter LCDs in this category.

The Sharp LL T15G3 is one of the most space saving LCD monitors in its category. The design is quite simple, and it is available in white and black options. The LL T15G3 comes with five buttons for screen configuration, including one auto configuration button. Other interesting options, such as Auto-Gain, can also be set. The screen can be tilted 60 degrees for easier viewing, and can also be wall mounted. This LCD does not come with speakers, which is the only dissapointment, but has the manual, drivers, and a signal cable bundled along.

The Samsung Sync Master 151MP was the most feature-rich LCD in the 15-inch category. Boasting of HDTV and TV tuning capabilities, it certainly stands out from

The Mystique of the LCD

Why are LCDs so costly, if they are smaller in size, and use less power? The reason is their high rate of failure during manufacturing. As every pixel has individually controlled transistors that switch on and off, manufacturing calls for a higher degree of precision—which becomes a much greater challenge as compared to CRT manufacturing. There is certain level of quality control adopted by every manufacturer while fabricating LCDs. Therefore, a large numbers of fabricated LCDs are rejected during quality control check because of high dead pixel count, (malfunctioning transistors). These screens have to be discarded and the costs are passed on to the consumer.

Due to this high failure rate, most companies do not consider three or less dead pixels to be a defect—but, as a user you should watch out for this. Also, as the screen size increases, the number of dead pixels increase—hence the yield takes a nose dive, which further inflates the cost of large screen LCDs.

The current LCD manufacturing technique is similar to applying paint to a wall with a roller. Companies such as IBM have researched alternatives to this unreliable technique. The new technique uses electrically charged atoms to position the transistors, hence increasing the accuracy of crystal placing and lowering the failure rate. A very fine layer of carbon is spread over the LCD-to-be and then an ion-gun is used to shoot aside the surface carbon atoms, hence forming rows on which the transistors can be precisely placed. This technique now awaits adoption by various LCD vendors. The faster they implement this technique the better.

Acer AL511
+ Light weight
- No built in speakers and wall mounting

CMV 1512
+ Overall good performance; Light weight; High luminance
- NA

CMV 1515
+ Good luminance
- NA

Digiview DGL 115SP
+ Good performance
- NA

HCL HCM 500 LSA
+ Good refresh rates
- Poor performance

How to buy an LCD

LCDs are the latest in display technology. With their sleek looks, and crisp displays, they are becoming a viable alternative. They use liquid crystal filled grids, activated by electric fields to create even, smooth, finely defined images. They are especially useful for places where desk space is in short supply. Here are a few things to look at before buying one.

Digital or Analogue Inputs: If you want a sharper display, you can look for a flat panel monitor with a digital input—also called Digital Video Interface (DVI). Remember that you will need a special graphics card with a DVI output connector.

Resolutions: Make sure that the native res-olution of an LCD monitor matches what you normally use. Also look for monitors that offer the one-touch auto adjust feature that matches your screen display with your computer resolution.

Dead Pixels: One thing to look for in LCD monitors are dead pixels. These are pixels that are always on or always off. The simplest way to test for this is to display a totally white screen and look for black or coloured dots, and then display a totally black screen and look for white or coloured dots. A few dead pixels here and there won't really make a difference, but too many in the wrong place can become an irritation, and mar the display quality that you bought the LCD for.

the crowd. The design is gorgeous, the OSD is displayed in translucent blue and the control buttons beep when pressed. It has four buttons on the left side of the front panel to control the PC, Picture-in-Picture (PiP), Video and Audio settings. There is also an auto adjustment button to automatically set the properties to default values. To make the TV viewing even more enjoyable, a remote control is provided. It has in-built speakers that can provide virtual surround sound for a sweet and enjoyable experience. The only thing this monitor lacks is the support for DVI input—though it does have support for RCA and S-Video. To complete its 'home theatre'applications, the LCD can be wall mounted. It comes bundled with the mandatory user's manual, driver and colour calibrating software.

Built on similar lines as the Samsung's 151 MP, the Philips 150 MT 20P LCD monitor is dressed for the future. The features include support for HDTV, an external TV tuner, built-in speakers and a remote control. It has blue LED buttons for accessing the translucent blue OSD menu. The buttons are feather touch and a joy to operate. It also has an auto button to automatically adjust screen settings. One notable feature is the high luminance of 310 (cd/m2). It supports RCA and S-Video, and comes with the necessary audio and video cables to connect it to a PC or DVD player. An interactive multi-media CD is provided, which doubles as the users guide and the driver CD.

LG's 566 LE has 5 buttons on the front panel, to help you navigate about the OSD. This is a sleek metallic looking monitor, with a sharp display—second in its category in the sharpness and resolution tests. The OSD takes a little getting used to. The monitor itself comes in a plain vanilla package, and includes only the user manual and a CD containing the drivers. We expected at least one colour profiling software to be included with the monitor, as LCD's are still considered to be premium products in India. The manual is also not exhaustive and contains only basic instructions for installing the

monitor. It should have had a manual containing instructions on troubleshooting and maintenance of the LCD monitor, which would have helped this monitor gain some more points. Overall, it was a good competitor, but could have had some additional features—considering Rs 24,000 that you shell out to purchase it.

CMV, a lesser-known brand and a new player in the market, has monitors that provide a high luminance of around 400 cd/m2, which drastically boost the brightness and contrast levels for vivid and lively pictures.

Lastly, the sleek looking Sony SDM S51, doesn't support wall mounting or height adjustment. Neither does it have DVI support, which is expected from a monitor priced at Rs 31,000. The maximum resolution supported by this monitor is 1024 x 768 at 60 Hz, which is below par, compared to other 15-inch LCD monitors. The accessories provided include the driver CD and a user guide. This monitor is suitable for home and office use, but the hefty price that you have to pay for this is not justifiable.

17-inch monitors

Built on similar lines as it's sibling in the 15-inch category, the Samsung Sync Master 171 MP offers the same set of features and extends the elegant design aura to this monitor. The overall looks are enhanced by the metallic silver colour, with sleek styling and practical design. The 171 MP boasts of some impressive features, such as HDTV and an optional TV tuning capability. A full, function remote control provided along with it, makes your entertainment hours even more enjoyable. It has feather touch buttons on the front panel that beep when you press them to configure the OSD. The in-built speakers, envelope you with virtual surround sound. Its PiP feature allows you to watch TV and work on your computer simultaneously—the most impres-

LG 566LE
+ Good performance
- No in-built speakers and low on features

Philips 150 MT20P
+ External T.V. tuner card; good luminance
- Low in performance

Philips 150 P4 AB
+ Compact design; height adjustable
- Expensive

Samsung Syncmaster 151MP
+ Good performance; HDTV ready
- Expensive

Samsung Syncmaster 152S
+ Good performance, Feature set; Light weight
- No in-built speakers

sive feature of the lot. Other nifty features, such as wall mounting, support for DVD player connectivity via RCA or S-video inputs and colour calibrating software, are also available.

The Samsung 171S is built around a different strategy—it is made for the value conscious buyers. This LCD features an all carbon black body with the buttons placed at the upper right hand corner of the 17-inch screen. One interesting feature is the ability of the monitor to be used in landscape or portrait mode—this can be achieved by using the provided software. The monitor also has other nifty features, such as height adjustment, wall mounting, etc. Unfortunately, it lacks DVI support and in-built speakers. The accessories provided along with the monitor include a user guide, colour calibrating software, driver CD and the pivot configuring software.

The Philips 170 B4MG was another feature-packed LCD in the 17-inch category. This monitor comes with the option of portrait or landscape mode, which is a niche feature considering that only two LCD monitors in our test had it. It also has an optional USB hub feature, in-built speakers, height adjustment and a screen tilt angle of 175 degrees. The package included the monitor, manuals, and the driver CD. The user manual was pretty exhaustive, but there was no colour software included.

The LG Flatron 1710B had three USB ports, and a tilt angle of 140 degrees. The ViewSonic VG700 LCD was also gunning for the glory with a decent design. The VG700 comes with integrated speakers and a Kensington lock as an optional accessory, so that you can secure it to your desktop. It also comes with its own colour calibrating software.

All other 17-inch LCDs in our test either had too few features to mention or they came with the standard features that did not justify their high price tag.

Test Analysis

LCDs were put through three additional-tests, namely OSD usability, a viewable angle test in which a document containing different fonts was opened and read at various angels, and the LCD Pixel Persistence test to check for blurring, ghosting or streaking.

The CMV1512 topped these in the 15-inch category, as it was the only monitor in which we could read the document clearly from an angle of 160 degrees—perfect for presentations. The OSD is also very convenient and easy to operate.

It performed above average in the pixel persistence test.

The Sharp LL-T15G3 stood second, because despite a good score in the Pixel Persistence and Viewable Angle tests, it performed poorly in the OSD test.

There were five models vying for the third position. The HCL HCM 700LSA, the HCL HCM 500SLA and the CMV1515 TFT's performances were below average in the Pixel Persistence and Viewable Angle tests—the document could not be read, and a distinct blue and yellow tinge was seen. This makes these LCDs a bad choice for watching movies or playing games.

Moving on to the 17-inches category, Samsung Syncmaster 171s stood first because of its good performance in the Pixel Persistence and OSD Usability test. Its performance in the Viewable Angle test was also above average.

The LG Flatron 1710B stood second by performing extremely well in this test. It lost out because of its poor performance in the LCD Pixel Persistence test, when a certain amount of blurring was noticeable.

On the other hand, the Acer AL 712's performance in this test was mediocre, especially in the Viewable Angle and Pixel Persistence tests—the document could be read at a maximum angle of 140 degrees.

Glossary

Aperture Pitch: The equivalent of horizontal dot pitch on shadow mask CRTs; the distance between one stripe and the next one of the same colour, expressed in millimetres; also known as Stripe Pitch.

Auto sizing: The ability of a monitor to maintain a consistent image size across different video modes.

Anti-reflective coating: A special coating, applied to the front of the CRT, to reduce glare. Anti-reflective coatings enrich the colour black by decreasing the amount of light reflected off the front of the screen by outside sources. This helps black text stand out on white backgrounds, aiding in readability.

Bandwidth: Expressed in megahertz, bandwidth is a measurement of a monitor's pixel clock. The higher the pixel clock, the higher the Bandwidth requirement of the Video Amplifier.

Bezel: This is the outer frame of the front face of a computer monitor that holds the CRT inside the monitor cabinet.

BNC Connector: A connector for coaxial cable designed to lock two ends together when one end is inserted into the other and turned 90 degrees. BNC connectors do not support the Windows Plug and Play Standards.

Colour Calibration: The necessary adjustment of colours that causes the colours on the monitor to match the ones produced by the printer. Without adequate calibration, the printed page may not accurately reproduce what is displayed on the computer screen.

Colour Depth: Colour depth is determined by the number of bits used to produce colour in each pixel on a monitor display. The more bits used, the greater the number of colours that can be displayed, provided that a graphics card and monitor have the capability to display them. Common bit ranges are 8-bit colour (256 colours), 16-bit colour (thousands of colours), and 24-bit colour (millions of colours). Most monitors in use today can display at least 16-bit colour.

Colour Temperature: Measured in degrees Kelvin, reference to colour temperature provides a standard for defining standard colours emitted from computer displays. This rating indicates the colour of a CRT or bulb when it is lit. It also indicates the general atmosphere (warm or cool) created by a particular CRT or tube.

Sony SDM-S51
+ Good looks
- Average performance, low refresh rates, minimal feature set

Sharp LL-T1520-B
+ Above average performance
- Heaviest

Sharp LL-T15G3B
+ Outstanding performance
- No built in speakers; minimal feature set

CRTs Vs. LCDs

	CRT	LCD
Physical Size	Large businesses and banks are concerned about the cost of providing extra desk space. CRTs take up space, which costs money.	One of the biggest advantages of LCD monitors is that they are compact and weigh less. An LCD monitor is based upon a very thin screen as opposed to the bulky tube of a CRT monitor. This means that not only do they take up less of your desktop space, they can also be used in many places where a larger CRT monitor cannot fit. Some LCD displays can even be mounted on the wall.
Display Size	CRT monitors are not sized by their actual viewable diagonal measurement. For example, the viewable area on a 17-inch CRT monitor will typically only measure 16-inch diagonally.	LCD monitors are typically sized by their actual viewable diagonal measurement. For example, the viewable area on a 17-inch LCD monitor will measure 17 inches diagonally.
Resolution	CRT monitors are usually capable of displaying multiple video resolutions, each with the same quality.	LCD monitors usually have what is called a Native resolution, or the resolution that it displays best. The native resolution is generally the highest resolution that the LCD can display and this is the display resolution that will appear the crispest and sharpest.
Viewing Angle	A CRT screen can be looked at from a very wide angle, practically from the side.	An LCD monitor typically has a smaller viewing angle, needing to be viewed more directly from the front. From the side, the image on an LCD screen can seem to disappear, or invert colours. Newer displays that are coming out have wider viewing angles so this is not as much of an issue as it has been in the past.
Radiation Emission	CRT monitors have a flicker and give off radiation leading to headaches, eye strain, tears and may be blamed for eye damage to consistent users.	LCD flat panel monitors have no flicker, and produce no harmful radiation.
Power Consumption	CRT monitors consume, depending on their size, between about 100 watts to 250 watts of electrical power.	LCDs consume about 40 watts on an average. This makes the LCD great for portable computers and other wireless devices such as PDAs.
Price	CRT monitors are generally more affordable. A CRT monitor will cost less but will use more energy than an LCD monitor.	An LCD monitor will cost more up front, but will conserve energy in the long run. The energy savings may not be much for an individual user, but if you are looking at a corporate office where hundreds of displays are in use, the energy savings might be more of an issue.

In the Screen Pixel Resolution test, the Samsung Syncmaster 152S and the Sharp LL-T15G3 scored the maximum in the 15-inches category. One could see the objects clearly without any sort of distortion in the lines. Samsung sync Master 151 MP stood second and all the others performed well, except for the below average performance of the Philips 150P4Ab.

In the Sharpness and Resolution tests, we looked at the displayed image for pixel bleeding, i.e. additional and blurry lines at the edge.

In the 15-inch category the Sharp LL-T15G3 emerged as the winner. It performed exceedingly well in the resolution matrix, the fine resolution matrix, the diagonal resolution matrix and the fine focus matrix tests.

The LG 566LE stood second, as even

Acer AL712
+ High refresh rates
- Heaviest amongst all

BenQ FP767
+ Above average performance, light weight, Economically priced
- Low in features

BenQ FP781
+ Light weight
- Low luminance & feature set

HCL HCM 700 LSA
+ Extermely lowly priced
- Poor performance

LG 1710B
+ Excellent performer, Wall mountable
- No speakers

Whites, whiter; Colours Brighter

Most people don't know that normal brightness and contrast settings are not optimised for games. In fact, 3D games require different settings altogether to give the same graphical effect that the designers intended. For example, you might miss an essential item because your screen was too dark, or you might not be able to see an opponent in time for you to take action. This is where 3Deep comes in. By adjusting your gamma and colour settings to work with games that support it, you can get the best possible output from your monitor.

Using 3Deep is a very simple process. The moment you've finished installing the program, a calibration wizard pops up and guides you through the process. We used Sony's SDM-N80 19-inch LCD display for our workshop.

There are seven steps to calibrating the display, the first step is choosing the kind of display you use. The angle at which you view the LCD screen is very important.

Now, you have to set the elevation and angle of the screen to what you normally use. Once this is done, the software will determine the actual contrast level, in order to set the optimal view distance for your display.

In the next three steps, you need to set the optimal levels for each colour component of your display—red, blue and green. This is the most important part of the test, as things can go awry if not done carefully. Take your time in deciding the exact point at which the intensity of the middle strip equals the background.

Finally, in the last step, you can do some extra tweaking to get exactly what you want. Keep an eye out for the 'Before\After' section to view the results of your setting. Clicking on the 'Set Game Gamma' button will apply the results. This button also forces games that don't support 3Deep to accept the calibration settings that you've chosen.

Remember, it's a good idea to rerun the program every once in a while, especially if you change your resolution, bit depth, or your entire display. Have fun beating the bad guys!

---

though it performed exceedingly well in the resolution test its horizontal bar resolution was average. The Samsung Syncmaster 152S stood third because of its average performance in the horizontal and vertical bar resolution test. The Acer AL511's performance was way below average in all the subtests.

Moving to the 17-inch category, the BenQ FP767 stood first, as its performance was simply outstanding in the resolution test. The LG Flatron 1710B stood second because of its below average performance in the Horizontal and Vertical Bar Resolution tests. The Samsung Synmaster 171s stood third due to a reasonably poor performance in the horizontal bar resolution test. The Philips 170B4 MG performance was just not acceptable in any of the subtests and stood dead last.

When it comes to Colour and Grayscale, the Acer AL511 stood first as it aced the three subtests, with no visible streaking or ghosting. The Sharp LL-T15G3 came close, but lost out by a margin of 0.25 points.

The HCL HCM 500 SLA's performance was disappointing, as there was lot of ghosting and streaking visible, and its performance in the White and Black Level shift was mediocre.

The LG Flatron 1710B won the 17-inch category, with a good performance in the white and black level shift. For the second place, it was a tie between the Samsung Syncmaster 171S and the Sony SDM-S71. The Philips 170 B4 MG's performance in this test was way below average.

In the Miscellanous tests, the Samsung Syncmaster 151 MP got the maximum score as the screen was uniform throughout and there was absolutely no flicker. The Philips 150 MT came close by standing second as its performance in the Screen Uniformity test was average. CMV1512 put on a valiant fight but lost the second position just by 0.25 marks and came third. The Philips 150 P4 AB performance was disappointing as one could notice dark and light regions on the screen.

In the 17-inch category Samsung Syncmaster171s performed quite well hence stood first. The Sony SDM S-71 also performed quite well and came in second. The Acer AL 712 and Samsung Syncmaster 171 MP both performed poorly and stood last.

Philips 170 B4 MG
+ Convertable from landscape to portrait; wall mountable; In-built in speakers
- Poor performance

Samsung 171MP
+ Sleek looking; TV tuner
- Low luminance; Very expensive

Samsung Syncmaster 171S
+ Good performance; Convertable from landscape to portrait; Wall mountable
- No in-built speakers

Sony SDM-S71
+ Good performance
- Low on features

Viewsonic VG700
+ Good feature set
- Low refersh rate; Average performance

SCORE BOARD

CATEGORY	15″ LCD				
Brand	Acer	CMV	CMV	Digi-View	HCL
Model	AL511	1512	1515 TFT	DGL-115SP	HCM 500 LSA
Size (Inches)	15	15	15	15	15
Pixel Size (mm)	0.297	0.297	0.297	0.297x0.297	0.297
Luminance (cd/m2)	250	400	400	250	N/A
Maximum Resolution/Refresh Rate	1024x768	1024x768@75 Hz	1024x768 @75 Hz	1024x768	1024x768 @75 Hz
Vertical Scan Rate (Hz)	56-75	55-75	55-75	50–70	55-75
Horizontal Scan Rate (KHz)	24-60	28–65	28-65	29-60	30-60
W x H x D (mm)	353x368x204	384x376x180	384x391x160	390x375x150	356x356x160
Weight (KG)	3.2	3.3	3.5	4.2	3.7
USB hub (✔/✘) / No. Of. ports	✘	✘	✘	✘	✘
In-built speakers (✔/✘)	✘	✔	✔	✔	✔
Rotating angle of screen	APP. 60 DEGREES	✘	✘	350	30
Wall Mounting (✔/✘)	✘	✔	✔	✔	✘
Height Adjustment (cm or inches)	✘	✘	✘	✘	✘
Landscape to portrait (✔/✘)	✘	✘	✘	✘	✘
In-built TV-Tuner (✔/✘)	✘	✘	✘	✘	✘
Emission Standard Followed	TCO 99	TCO 99	TCO 99	FCC	EPA Energy Star
Bundled Accessories (Manuals, Colour Profile, Driver and Calibrating software…)	Power cord, video cable	Manual, video and power cable, warranty card.	Manual, Warranty registration card, Audio Cable, Signal Cable, Power Cord, DC Adapter	Manual, power cord, VGA Cable, Audio Cable, DC adapter	Manuals power and video cable and driver disk.
Performance(50%)					
Sharpness and Resolution (Scale of 35)	16.5	28.25	24.75	27.75	26
Screen Pixel Resolution (Scale of 5)	4.25	4.5	4.25	4.25	3.5
Color and Gray Scale (Scale of 45)	41.5	40.75	37.25	36.75	31.5
Miscellaneous Effect (Scale of 20)	18	18.25	15.75	17.75	13.25
LCD Additional Test (Scale of 15)	9.5	11.75	9.5	11.25	9.5
Overall 50 % (performance only)	34.596	39.765	34.955	37.84	31.87
Overall 20 % features only)	3	5	5	5	3
Overall 20 % Value for Money	12.22	12.62	11.21	12.66	10.31
Overall 10 % warranty and support	6	8	8	4	4
Warranty and Support					
No. Of years/Type of warranty	1 year on site	3 years carry in	3 years carry in	1 year	1 year
Overall Product Score	55.82081241	65.3827381	59.16897727	59.49468182	49.17329832
Ranking	🔴	🔴+	🔵	🔵	🔴
Vendor Details					
Contact	Acer India Pvt Ltd	Chemoplast	Chemoplast	D-Link India Ltd	HCL Infosystems Ltd
Phone	080-5219520	022-26733353	022-26733353	022-26526696	044-22340165
E-mail	rajesh_aiyar@ acer.co.in	chemoplastmumbai@ vsnl.net	chemoplastmumbai@ vsnl.net	sales@dlink.co.in	kiruba@hclp.com
Web site	www.acer.co.in	www.chemoplast.com	www.chemoplast.com	www.dlink.co.in	www.hclinfosystems.com
Price (Rs)	19,990	21,000	22,000	22,000	21,990

15″ LCD					
LG	Philips	Philips	Samsung	Samsung	Sharp
566LE	150 MT20P	150 P4AB	Syncmaster 151MP	SyncMaster 152 s	LL-T1520-B
15	15	15	15	15	15
0.297 x 0.297	0.29	0.297	0.297	0.297	0.297
250	310	250	250	250	250
1024x768@75 Hz	1024x768@75 Hz	1024x768@75 Hz	1024x768	1024x768@75 Hz	1024x768@75 Hz
50-75	56-75	56-76	56–85	56-75	60-75
31-61	31-63	30-61	30–69	30-61	31.5-60
356x351x182.1	392x374.1x167.8	314x319x218	358.6x361.5x175.5	357.5x346.7x184.5	337x355x185
4.1	4.1	3.9	4.2	2.9	4.9
✘	✘	✘	✘	✘	✘
✘	✔	✔	✔	✘	✘
✘	✘	✘	350		90
✔	✘	✔	✔	✔	✔
✘	✘	4.8 cm	✘	✔	✘
✘	✘	✘	✘	✘	✘
✘	External TV Tuner	✘	✘	✘	✘
TCO 99	Energy Star	EPA Energy Star,	FCC	TCO 99	TCO 95
User guide, driver CD, Power cord, HD15 Cable attached	power cord, signal cable, External TV tuner, Remote , HDTV compatibiity	TCO 99 No	Manual and driver CD, power cord, VGA Cable, Audio Cable, AC adapter, Remote and internal TV tuner card	1 power cord, 1 AC adapter, Manual, 1 CD with drivers, 1 wal mountable stand, 1 set of 7 screws with 4 jumpers, 1 display cable, 1 booklet on Natural Colour Mngt system	Display cable, power cable, floppy with drivers, 1 audio cable
30.25	20.25	25.5	28.5	30	25.25
4.5	3.5	2.75	4.5	4.75	4.25
37.5	34.5	38.75	36.5	39.5	40.25
16	15.5	14	18.5	17.75	18.25
10.25	11.25	11.25	11.25	11	10.75
37.57	32.753	34.50	38.63	39.56	38.03
2	6	5	8	8	4
10.72	5.04	7.82	5.05	11.89	8.81
10	8	8	10	10	4
3 years onsite	3 years comprehensive including Panel warranty	3 years comprehensive including Panel warranty	3 years/onsite	3 years/onsite	1 year
60.286875	51.79189778	55.3155	61.68158333	69.44375	54.84274194
🅑	🅑	🅑	🅑		🅑
LG Electronics India Pvt Ltd	Philips India Ltd	Philips India Ltd	Samsung Electronics India Information & Telecommunication Ltd	Samsung Electronics India Information & Telecommunication Ltd.	Sharp India Ltd
0120-2560900	022-56912353	022-56912353	011-51511234	011-51511234	011-26431313/ 26438866
response@ lgezbuy.com	sanjay.maheshwari@ philips.com	sanjay.maheshwari@ philips.com	marketing@ samsungindia.com	marketing@ samsungindia.com	lcd@sharp-oa.com
www.lgezbuy.com	www.philips.co.in	www.philips.co.in	www.samsungindia.com	www.samsungindia.com	www.sharp-world.com
24,000	49,990	32,000	60,000	26,000	31,000

CATEGORY	15" LCD		17" LCD		
Brand	Sharp	Sony	Acer	Benq	BenQ
Model	LL-T15G3	SDM-S51	AL 712	FP 767	FP 781
Size (Inches)	15	15	17	17	17
Pixel Size (mm)	0.297	0.297	0.26	0.26	0.26
Luminance (cd/m2)	260	250	250	290	200
Maximum Resolution/Refresh Rate	1024x768@75 Hz	1024x768@60 Hz	1280x1024@75 Hz	1280x1024	1280x1024
Vertical Scan Rate (Hz)	56-75	28-60	56-75	56.25-75	56.25-75
Horizontal Scan Rate (KHz)	31.5-60.2	48-75	24-80	31.47-83	31.47-81.18
W x H x D (mm)	338x313x145	387.35x330.2x177.8	374x394.5x204	382.7x404.3x200	404.6x449.6x202.1
Weight (KG)	3.8	3.7	7	4.4	4.7
USB hub (✔/✘) / No. Of. ports	✘	✘	✘	✘	✘
In-built speakers (✔/✘)	✘	✘	✔	✔	✔
Rotating angle of screen	90	✘	80	✘	✘
Wall Mounting (✔/✘)	✔	✘	✔	✘	✘
Height Adjustment (cm or inches)	✘	✘	✘	✘	✘
Landscape to portrait (✔/✘)	✘	✘	✘	✘	✘
In-built TV-Tuner (✔/✘)	✘	✘	✘	✘	✘
Emission Standard Followed	TCO 95	TCO 99	TCO 99	MPR II	MPR II
Bundled Accessories (Manuals, Colour Profile, Driver and Calibrating software…)	Manual, floppy with drivers, signal cable	Manual, Warranty card, Audio Cable, Signal Cable, Power Cord, AC Adapter, utility CD-ROM	Power cord, video cable	Power cable, users manual, color software and driver CD.	power cord, Driver/Manual CD, Quick Start Guide, Power Adapter, HD15 Cable, Audio Cable
Performance(50%)					
Sharpness and Resolution (Scale of 35)	31.25	27.75	27.25	30	28.25
Screen Pixel Resolution (Scale of 5)	4.75	4	4	4.5	4.25
Color and Gray Scale (Scale of 45)	41.25	37.25	33	39.75	36
Miscellaneous Effect (Scale of 20)	18.5	16	15	17.25	16.5
LCD Additional Test (Scale of 15)	11.5	11.25	9.75	10.75	10.75
Overall 50 % (performance only)	41.16	36.76	34.17	39.09	36.83
Overall 20 % features only)	4	2	7	7	5
Overall 20 % Value for Money	13.05	8.00	10.30	11.97	10.08
Overall 10 % warranty and support	4	7	6	10	10
Warranty and Support					
No. Of years/Type of warranty	1 year	2 year/onsite in metros and carry in rest of India	1 year on site	3 years/Onsite	3 years/onsite
Overall Product Score	62.20235556	53.75568254	57.47007402	68.05796028	61.90603805
Ranking	🏅	🏅	🏅	🏅	🏅
Vendor Details					
Contact	Sharp India Ltd	Rashi Peripherals	Acer India Pvt Ltd	Benq India Pvt ltd	Benq India Pvt ltd
Phone	011-26431313/ 26438866	022-28260258	080-5219520	022-25705231	022-25705231
Email	lcd@sharp-oa.com	ho@rptechindia.com	rajesh_aiyar@ acer.co.in	salesenquiryin@ benq.com	salesenquiryin@ benq.com
Website	www.sharp-world.com	www.sony.com	www.acer.co.in	www.benq.co.in	www.benq.co.in
Price (Rs.)	22,500	31,500	39,990	38,499	41,499

Sharp LL-T15G3

Sharp's slim 15-inch LCD monitor is ideal for first time LCD monitor users, or businesses looking for a value-oriented solution for multi-monitor applications. It uses a bright, vivid 15-inch TFT liquid crystal panel with a wide viewing angle—the LL-T15G3 provides bright, clear pictures, in which even small letters are clearly legible. The monitor's one-touch automatic screen adjustment feature easily renders all synchronization and geometry adjustments to match your computer's video signal. In addition, the auto gain control function automatically matches the black level and contrast, optimising the monitor for best viewing. The monitor also features a colour management function compatible with the 'sRGB' international standard for colour reproduction. By performing colour conversions that adjust to liquid crystal characteristics, the LL-T15G3 displays pictures with natural tones, and colour matching is achieved with sRGB compatible peripheral equipment.

On the performance front it aced three of our five tests, securing its winning position.

HCL	LG	Philips	Samsung	Samsung	Sony	ViewSonic
HCM 700 LSA	Flatron 1710B	170 B4 MG	SyncMaster 171MP	SyncMaster 171s	SDM-S71	VG700
	17	17	17	17	17	17
✗	0.26	0.26	0.264	0.264	0.26	0.26
✗	250	260	240	250	250	260
✗	1280x1024@75	1280x1024	1280x1024@76 Hz	1280x1024@76 Hz	1280x1024	1280X1024@60 Hz
✗	Hz	56-76	56-85	56-76	48-85	50-85
✗	56-75	30-82	30-81	30-81	28-92	30-62
✗	30-83	375x413x184	412x418x203	444.5x457.2x208.3	423x399x233	410x421x119
✗	370x421x223	6.3	5	5.41	6.5	5.2
✗	6.6	✗ / Optional	✗	✗	✗	✗
✗	✓/3	✓	✓	✗	✗	✓
✗	✗	175	80	160º/120º (H/V)	✗	✗
✗	Swivel 360	✗	✗	✓	✗	✓
✗	✓	✓ / 50 mm	✗	✓	✗	✗
✗	✗	✓	✗	✓	✗	✗
✗	✗	✗	✓	✗	✗	✗
✗	✗	Energy Star	TCO 99	TCO 99	TCO 99	Energy Star, TCO 99
Manuals power and video cable and driver disk.	TCO 99 User guide + info CD, power cord, DVI cable, HD 15 cable, USB cable	power cord, signal cable, manual, user guide on CD,	Manuals, Installation CD, 15-pin D-Sub Signal Cable, Scart Jack, DC Adapter, Remote Controller.	Manual, Signal Cable, Power Cord, CD with drivers, 1 CD with Pivot Software, Natural color management system booklet, monitor installation guide	1 Manual, 1 limited warranty card, 1 power cable, 1 display connector cable, 1 CD with drivers, 1 power adapter	Manual, color profile software, driver, calibrating software, kensington lock.
20		13.5	27	29	28.25	22.5
3.25	29.25	3.75	4.5	5	5	4.75
32	4.75	31.75	36.75	41.75	41.75	35.25
13.5	42	15.5	15	18.5	18	14.75
7.5	17.75	11.5	10.5	12	11.25	12
29.09	11.75	29.08	35.68	40.82	39.937	34.22
0 *	40.282	11	12	10	1	8
7.66	7	7.56	6.36	12.10	5.53	5.53
4	11.53	6	10	10	7	10
	10					
1 year/ carry in	3 years onsite	3 years comprehensive including Panel warranty	3 years/onsite	3 years/onsite	2 years/onsite in metros and carry in rest of India	3 years onsite.
40.75031579	68.81419512	53.64725741	64.0328	72.91628571	53.46902703	57.75302703
HCL Infosystem	LG Electronics India Pvt Ltd	Philips India Ltd	Samsung Electronics india information & telecommunication Ltd	Samsung Electronics india information & telecommunication Ltd	Rashi Peripherals	Roop Technology Pvt Ltd
044-22340165	0120-2560900	022-56912353	011-51511234	011-51511234	022-28260258	022-26681921/ 022-26681923
kiruba@hclp.com	response@lgezbuy.com	sanjay.maheshwari@philips.com	marketing@samsungindia.com	marketing@samsungindia.com	ho@rptechindia.com	roop@vsnl.com
www.hclinfosystems.com	www.lgezbuy.com	www.philips.co.in	www.samsungindia.com	www.samsungindia.com	www.sony.com	www.viewsonic.com
38,000	41,000	52,990	75,000	42,000	74,000	49,000

Samsung Syncmaster 171 S

If you're looking for a monitor that is small in size, but big on performance, the Syncmaster 171S has it all. This TFT-LCD monitor has the features of a quality 17-inch LCD with a space-saving elegant slim design. It's ideal for the crowded office or the home user looking to maximize space.

Read e-mails, view your critical data, and play games on the 171S, as it delivers the same crisp, clear text and bright vivid colours for every application. At 1280 x 1024 maximum resolution, it is flicker-free with automatic adjustment. This monitor produces razor sharp images, high brightness, and a 330:1 contrast ratio, for picture perfect images every time.

An exceptional response time of less than 25 ms make the 171S ideal for video, 3D technologies, and Web developers. Plus, convenient one-button auto-calibration and colour control add new levels of precision to any application.

On the performance front it scored very high marks (40.817 per cent) and moreover due the price tag of only Rs 42,000, it won the award of the Best Value category.

MITUL MEHTA, BHASKAR BANIK and SHIJU THOMAS

Fortify your PC

Spyware, virus and unauthorised access,—we bring you the tools that will protect your PC, and the world within it

contents

ILLUSTRATINS: Mahesh Benkar

Where is the Fire?

The Internet is one of the best things that ever happened to mankind. But like all good things in life, it also comes with its share of woes. What was once meant to be a means for sharing important information across geographical boundaries, has now turned into a vehicle that lets hackers sit in the comfort of their dens and wreak havoc on unsuspecting users. Securing systems and data from such malicious activity has been the top concern of leading corporate houses across the globe, and has led to a billion dollar Internet security industry. Almost all organisations employ the services of professional security companies to secure their networks from hackers. Despite this, there has been an increase in hacking activity and security exploits worldwide.

If this is the case with corporates, then what about home users? Aren't they prone to the same level of vulnerabilities? Well, not really; it's actually much worse. A majority of home users access the Internet without installing any security software in the belief that their computers are too unimportant to be hacked. This is no longer the case *(see box, 'Why would Anybody Hack my PC?')*, and even if it were, there are enough mischief mongers out there who wouldn't mind spending hours hacking into a PC just for fun.

So what do you do about this threat? Simple, just install one of the personal firewalls that are specifically tailored to protect the home user against crackers. These applications quietly sit on your PC and look through all the tons of traffic that goes through your network connection everyday. They protect you against all the bad guys out there trying to get a hold of your PC.

The internals

A firewall's basic function is to protect your computer against any form of Internet abuse. This is easier said than done for the number of new methods and tools available for hacking is simply mind-boggling. Fortunately (or unfortunately), all these tools are based upon certain age-old exploits that were found in the protocols running the Internet. These include various forms of Port Scanning, Packet filtering and Denial Of Service (DOS) attacks. Firewalls are always standing guard at your PC's doorstep trying to figure out genuine pings *(see box on 'Useful Commands')* and denying

Info Ports are like doors to your system, and if left ajar, any smart hacker could break into your PC

Packet filtering firewalls only look at the source and destination IP addresses of a packet, and then decide its fate

requests from the dangerous ones. In short, they should have enough intelligence to catch newer tools that use some variations of the older techniques in the same way as anti-virus software have to use heuristics to catch newer strains of older viruses.

Firewalls use three primary techniques to protected you from malicious code and hackers. These are Packet Filtering, State Inspection and Application Level Inspection

In Packet Filtering, the firewall simply inspects the IP addresses of the packets, and compares it with an access control list to decide upon the fate of the concerned packet. Since the firewall does not have any in-built intelligence and it does not remember any previous information about the packets transmitted—the overhead place by this technique is minimum.

The next level of security is provided by State Inspection firewalls. They not only inspect the content of the packet, but also look through their behavioural history to decide whether to grant access or not.

Application Level Inspection is the most advanced technique, whereby every layer of the TCP/IP protocol stack is inspected, and a decision is taken accordingly. Obviously, this level of inspection also places maximum overhead on the system.

A software firewall sits on your laptop or desktop and scrutinises all Internet traffic

How we tested
The tests were designed to test the firewall's capability for providing basic security, as well as all the enhanced features.

Information Leakage Tests: The firewall's ability to resist external users from gaining information—such the operating system used, number of open ports—about the target machine is tested here.

Helpful commands

Apart from using a firewall, there are some very useful commands that can be used to monitor your Internet connection. One of the most commonly used commands is 'netstat'. It gives a list of the all the open ports on your machine along with the protocols being used, the foreign addresses that are accessing the ports, and the state of each connection. This command can really come in handy at times when you are suspicious of the activities going on your PC. Other commands that can be used to troubleshoot your Internet connection are 'ping' and 'tracert'.

Why would anybody hack my PC?

Hackers might break into your computer for various reasons. For one they may want to use your computer as a stepping stone to launch other attacks. This may be to use your machine remotely, to hack into another PC, or to use your PC as part of a distributed denial of service (DDOS) attack. They will use your machine to execute their own programs, which might be anything from password crackers to port scanners. The hackers can also use your hard disk space to host data related to their hacking Web sites, so in case things go wrong, they can easily escape, as a site trace would lead to your computer.

Port scan testing: Port scan testing takes care of the firewall's ability to detect, and resist port scan attempts. Two standard port scanners were used—nmap and LANGuard. A third utility called Port Fun was also used. Finally, Open Ports is an HTA application that loads inside your browser, runs the netstat command locally, and then uploads the results to a server, along with displaying the results in your Web browser.

Detection of existing Trojans: In this test, Port Fun was installed on our test bed prior to installing the firewall. This program opens up ports on the test bed without specifying any service, or application using it. The firewall's ability to block it from opening up the ports was recorded.

OS Detection: Here, nmap was used with the -o option to perform active stack fingerprinting—a technique of sending custom IP packets to the victim's PC, and identifying the OS by analysing the response. This test was performed since detecting the operating system on the victim's computer is one of the first things that a cracker does. It gives him details of the version and patch level of the OS on the target, thereby letting him use relevant exploits available on various underground Web sites.

Hostile scripts test: In this test, the firewall's capability to detect and resist malicious scripts was tested. This has been included because firewall vendors claim that their offerings can detect and protect the host PC from all embedded objects on a Web page. This includes JavaScript, applets, ActiveX objects, etc.

The hostile Java applets used for this test are available at *http://packetstormsecurity.org.pk/java/*. One of these is the Consume Applet whose sole purpose is to waste processor power. To see if the firewall actually inspects all the internals of the HTTP stream, the applet page was renamed with a .txt extension instead of an .html extension.

To test the hostile embedded ActiveX resisting capability of the firewall, we used the ActiveX object test provided at the Finjan.com Web site *(http://www.finjan.com/mcrc/demos/activex.cfm)*.

Resource Utilisation

Firewalls protect your network at various security levels—from absolutely no inspection levels for trusted networks, to highly paranoid levels of packet inspection. But all these levels place additional overheads on system resources, proportional to the level of packet inspection specified. All memory resident programs from the system were removed and the firewall was then activated to test resource utilisation. The increase in kernel and memory utilisation was then measured to give the

additional system overhead placed by the firewall in the non-operational state.

Features: Additional features provided by the firewall—Ad Blocking, Mail Scanning, online alerts of malicious activity, update mechanisms, report generation and logging, Traffic Authorisation policies, inbound and outbound connection port blocking, provision for blocking using protocols, security levels provided, and the default security level—were noted.

Test set up: The test set up consisted of three machines. One was the target machine with the firewall installed on it, and the other two were used for hacking into the target. The target computer ran Windows XP. One of the attacking machines also ran XP, while the other was Linux based. The Linux machine used nmap for all the scanning and OS fingerprinting tests, while the Windows PC used LANGuard.

Sygate Personal Firewall Pro v5.0 build 1175:

This firewall is pleasing to the eye, and instead of a list of hacking events that your PC is subject to, it displays eye-catching graphs that show all the traffic in your little corner of the Internet and the work done by villains trying to get into your system. Also, it logs almost all the Internet activity into four logs—the Security Log, Traffic Log, Packet Log and System Log. It also gives you a list of all the applications currently accessing the Internet in their full iconic glory. It also does a very good job at stopping port scans, going as far as specifical ly stating that nmap was trying to do a port scan on your machine. It was also one of the few firewalls that stopped Open Ports from loading directly from the Web site. However it was toothless when Open Ports was run locally; it could not stop it from uploading

Info The CyberArmy is a shady group of hackers that perform Distributed Denial Of Service (DDOS) attacks, in a claim to 'liberate' the Internet from authorities
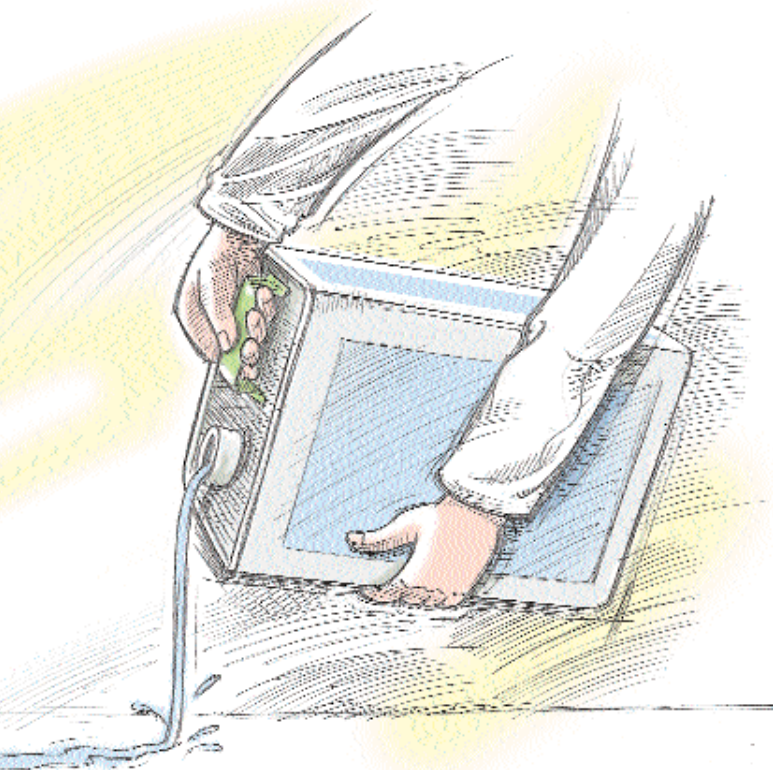
What is a Hardware Firewall?

Extremely large networks have what is known as a Hardware Firewall. This is a group of dedicated servers running a special OS and nothing else but the firewall. These servers are placed along the periphery of the network, such that no access to the Internet is available except through them. This creates a demilitarised zone (DMZ), an area that cannot be trespassed by unauthorised individuals.

the results to its server. It also did a terrible job at stopping Port Fun from opening up ports on the test bed.

Price: $39.95 ■ **System requirements:** Windows XP, 2000, NT, Me, 98, 95, Pentium 133 or equivalent CPU, 32 MB RAM, 10 MB free disk space, IE 5.0 or later **Web site:** www.sygate.com ■ **Grade:** A-

Microsoft XP Internet Connection Firewall:

The default Internet Connection Firewall (ICF), bundled with Windows XP, is as barebones as can be. It got the maximum score in installation since you just have to click on a check box to enable the firewall. It was also very easy to configure, although the number of features that could be configured was pretty much less than any other firewall we tested. But it did a good job at resisting port scans. One good thing about the ICF is that it has a very high default security level, although e-mail clients such as Outlook Express can still access and download e-mails unrestricted. Another shortcoming is the absence of alerting mechanisms and a very cryptic log file that hardly makes any sense to the layman.

Price: Free with Windows XP ■ **System requirements:** Bundled with Windows XP ■ **Web site:** www.microsoft.com ■ **Grade:** B

Kerio Personal Firewall 2.1.5:

This firewall from Kerio Technologies stood fifth overall— not really impressive, but it does have some features that were absent in the other firewalls. For one, it has a feature that saves configuration settings in multiple config files, so that they can be loaded as and when required—you don't have to reconfigure tasks such as letting your colleagues access your shared folders. Unfortunately, it could not stop Port Fun from opening up ports, even when set to the highest security level.

Price: Free for personal use; $39 for a single user commercial license **System requirements:** Pentium class Procesor or higher; Windows 9x, NT4, ME, 2000, XP; 32 MB RAM; 10 MB available disk space **Web site:** www.kerio.com ■ **Grade:** B+

The Honeypot project

A Honeypot is a machine that is put up on the Internet with the purpose of attracting hackers and then extensively tracking their behaviour. The results obtained from thousands of such Honeypots, spread across the Internet, are then analysed by the Honeypot project researchers and released in the form of reports or books that are used to develop effective counter attacks.

Norton Personal Firewall 2003:

This is a very efficient firewall that resisted all port scan attempts. Norton Personal Firewall uses the same LiveUpdate utility as Norton AntiVirus. It offered excellent resistance to port scanning. In fact, it even stopped Open Ports from running the netstat command and uploading results to the server. It has a friendly security assistant that lets you configure home networking, program scans, privacy control and password protection.

Price: $49.95 ■ **System requirements:** Windows XP, Pentium II 300 MHz or higher processor, Windows 2000 Pro, Me, 98, Intel Pentium 150 MHz, 25 MB hard disk space, 64 MB RAM, IE 5.01 ■ **Web site:** www.symantec.com ■ **Grade:** A

ZoneLabs ZoneAlarm Pro v3.7.159:

ZoneAlarm has been one of the best firewalls for quite some time; and it was no different this time. It was easy to install, configure and provided very good protection.

Immediately after the install, the configuration wizard guides you through the privacy control, level of alerting and password protection settings. You can also let ZoneAlarm preconfigure permissions for the browser and its components to access the Internet. After this, you can walk through a nine-step tutorial that will get you started with configuring the firewall.

The MailSafe feature lets you quarantine, or allow attachments based on their file types. For all its bells and whistles, ZoneAlarm does place some serious overhead on your Internet browser.

Price: $40 ■ **System requirements:** Windows 98 SE, Me, 2000 Pro, XP; 233 MHz Pentium CPU or higher; 10 MB of available hard disk space, Internet access, 48 MB for 98 SE/Me, 64 MB RAM for 2000 Pro, 128 MB RAM for XP ■ **Web site:** www.zonelabs.com ■ **Grade:** A+

ISS BlackICE PC Protection 3.6:

This firewall profiles your computer to create a baseline of all the existing applications. It identifies and defines nmap scans, giving limited information about what it does in a small event window. It also identified the nmap OS fingerprinting option, and fooled the port scanner by sending out many fingerprints. However, it could not stop Open Ports from identifying and uploading results to its server, nor could it stop Port Fun.

BlackICE also provides back-tracing of the intruders using DNS lookups and NetBIOS node status. While it was able to trace all information about the invading Windows machine, it could only find the IP of the Linux hacker. It gives visual and auditory event notification. It could not terminate an already running Port Fun, but did terminate the instance that was invoked later. However, the blocking features were dismal, since it could not block Port Fun from opening up ports (although it said that the action had been blocked in logs), once the termination condition was removed.

Price: $39.95 ■ **System requirements:** Windows 98, ME, NT 4.0, 2000, XP Pro, XP Home, Pentium class CPU or better, 16 MB RAM, 10 MB free disk space ■ **Web site:** www.iss.net ■ **Grade:** B+

Hacker bait

Most home users use peer-to-peer sharing applications, such as KaZaA and eDonkey, which require you to share a part of your drive. Effectively, what you are doing is closing all your doors, and opening a window. Hackers can exploit these vulnerabilities, especially if you configure your firewall to automatically allow the peer-to-peer sharing application to access the Net. You should configure your firewall to ask everytime an application wants to access the Internet.

McAfee Personal Firewall Plus:

This firewall has a tabbed view with three tabs—Summary, Internet Applications and Events. Summary gives a comprehensive list of all the frequently blocked addresses that occurred on your PC. It also gives a pie chart of the most frequently blocked ports. The Summary tab provides graphical information about the recent global port activity and an activity map displaying the level of world-wide malicious activity from Hacker-Watch.org. Strangely though, it does not display a graph of your local port activity and Internet traffic. Internet Applications gives a complete list of the applications that have tried to access the Net and their status (blocked or allowed). The Events tab gives particulars of all network activity along with the date, time, Source IP, Hostname (for Windows machines only) and event info. A simple drop-down box provided in the status bar lets you change your security level with the click of a mouse. It blocked Open Ports from running inside Internet Explorer, but failed to stop it from uploading results to the server.

Price: $44.95 ■ **System requirements:** Windows 98, ME, 2000, or XP, 8 MB free hard drive space, Microsoft Internet Explorer 5.0 or higher, ■ **Web site:** www.mcAfee.com ■ **Grade:** A-

Analysis:

All the firewalls tested gave decent protection against port scans, and many of them were able to detect that the scanning application was nmap. While all the top firewalls came with embedded objects protection, it didn't matter, as can be seen from the embedded objects test results. However, Norton Personal Firewall disabled the internal netstat command from showing any results due to which Open Ports failed to give any useful results. In terms of resource utilisation, ZoneAlarm was the least memory intensive inspite of having more features. On the configuration front, both ZoneAlarm and Norton were excellent, but ZoneAlarm was much easier to configure than Norton Personal Firewall 2003. While majority of the firewalls graphically represented the current Internet traffic, some of them even displayed a graph showing the recent attack history. Immediately after installation, both ZoneAlarm and Norton Personal Firewall 2003 came with wizards that helped you set up the firewalls. But configuring the firewalls later was easier in ZoneAlarm. In particular, the rule based filtering rules in Norton Personal Firewall 2003 is slightly complex, and could confuse a novice user. Updating was inbuilt and automated in almost all the firewalls except for Windows XP Internet Connection Firewall, which had to be updated using the standard Windows updating mechanism.

Overall, ZoneAlarm Pro was the winner, followed by Norton Personal Firewall.

PRAVEEN KURUP

Working with ZoneAlarm Pro

Here are a few tips to make working with ZoneAlarm easier and more efficient

Setting up custom security levels

ZoneAlarm comes with three zones—Internet, Trusted and Blocked, and three security levels—off, medium, high—that are enough for a novice. It is advisable to make changes to the default settings to increase, or decrease the security provided in each of these zones and security levels.

Select the firewall tab in the main ZoneAlarm window. Click on the Custom button in the concerned zone. Now select, or unselect all the required fields to customise your security settings. After you are done, click on Ok.

You can customise your firewall settings in ZoneAlarm Pro

Adding groups of computers to your security zones

In order to add a group of computers to your trusted or blocked zone, click on Firewall in the left navigation bar, and then select the Zones tab at the top of the ZoneAlarm window. Click on **Add > IP Range**. A window pops up wherein you can enter the selected computers in the trusted or blocked zone. Enter a range of IP addresses in the appropriate box, enter a description and then press OK. You will not be alerted everytime someone attempts to access your computer.
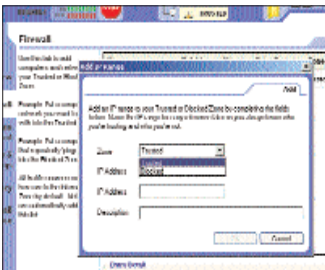
You can add a range of IP addresses to various security zones

Getting the best out of Program Control

Program control allows you to specify whether programs should be allowed to access the Internet. The setting should be initially kept at Medium when the program learns which programs should be allowed Internet access. It can later be turned to High

When you start a program such as MSN messenger for the first time, an Alert window shows up asking you whether it should allow the program to access the Net. Check the 'Remember this answer the next time I use this program' box, and then click on Yes.

But this is not advisable since it gives uncontrolled access rights to the program. A better option is to allow the program to access the network but not letting ZoneAlarm remember the answer. The advantage of using this method is that you will be alerted and asked to grant permission if multiple instances of the same program are trying to access the Internet. This prevents hackers from using newer instances of programs with access permissions to gain entry into your system.

By clicking on the Advanced Tab, you can also specify what action to perform for programs in the various zones.
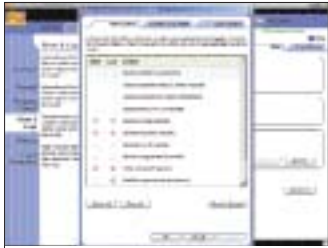
ZoneAlarm is highly customisable

Automatic Lock

Turn the Automatic Lock on if your computer is left unattended for long periods. By hitting the Custom button, you can specify when the lock activates and what programs it allows to access the Net.

Use Automatic Lock for added safety

Alerts and Logs

In the Alerts and Logs section, you can specify which Alerts to show, and which programs to log. Sometimes, you get too many alerts, which may distract you from your work. At the same time, you would want to be alerted when there is an attack on your PC. You should manually specify which events are to be logged and when you are to be alerted. You can do this by clicking on the Advanced tab and choosing the relevant fields.

You can choose which alerts and logs you want to see

SCORE BOARD

CATEGORY	Firewalls Test						
Developer	Symantec	**Zonelabs**	Kerio Technologies	Network Associates	Microsoft	ISS	Sygate
Product Name	Norton Personal Firewall 2003	ZoneAlarm Pro v3.7.159	Kerio Personal firewall Pro 2.1.5	McAfee Personal Firewall Plus	Windows XP ICF	BlackICE PC Protection 3.6	Sygate Personal Firewall Pro v5.0
Ease of Use	10.5	12	9	9	9	8.25	9.75
Features	22.5	23.75	13.75	18.75	10	15	15
Port scan testing	20	20	13.33	20	13.33	13.33	20
Hostile scripts/ embedded objects test	0	0	0	0	0	0	0
Depth of Configuration	8	8	6	6	4	4	6
Updating	1.67	1.67	1.67	1.67	0.00	1.67	1.67
Resource Utilisation	3	5	3	1	4	3	3
Overall Score	65.67	70.42	46.75	56.42	40.33	45.25	55.42

Virus B-gone!

Viruses are by far the most visible reason of security. Having the advantage of being among the first threats to affect computers, viruses have had that much more time to grab hold of the world's attention. Despite being so well-known (or perhaps because of it), many myths abound about what viruses and their lesser cousins are, and what they're capable of.

Although there's no hard and fast definition, it's generally agreed that a virus is a piece of code that has the ability to self-replicate—that is, it can make copies of itself automatically, once it enters a host computer. The code doesn't have to do anything nasty to be called a virus. This is something a lot of people aren't aware of. In a way, the very fact that the program is multiplying in your computer without your knowledge can be termed as malicious activity.

To be or not to be…

Although viruses for other platforms have been around for decades now, most agree that the first virus to spread from PC to PC was Brain. Legend has it that in the mid-1980s, Basit and Amjad Farooq Alvi, owners of Brain Computer Services in Lahore, wrote the boot sector virus to ascertain the extent of software piracy in Pakistan (they were software vendors). But Brain soon leaked through the Pakistani borders and quite harmlessly infected computers worldwide. Since then, there have been thousands of viruses added to the list.

According to IBM researcher Sarah Gordon, author of a number of books examining the mindset of virus authors, there are an estimated 8,000 to 10,000 virus writers in the world—the vast majority of who are teenage boys. The truth is that almost all these virus creators simply take existing viruses and modify a few bytes to create what are called variants—giving them bragging rights in the process. That's right; most viruses are the result of pre-pubescent insecurity. Only once in a while does a truly original creation come along and disrupt our collective existence.

Over the years, all this activity has led to the creation of several types of malicious code. Digging deeper into this world, you'll come across the following terms related to programs that cause you much pain.

Viruses: File Viruses attach themselves to selected programs, employing various techniques to do so. They are spread whenever an infected program or file is used.

Resident File Viruses stay in the computer's memory after the files they reside in are called up. Thus, each time a program is executed, the infection is repeated. This type of virus is harder to eliminate and some can even survive a 'soft reboot'. These are the most common types of viruses.

Stealth Viruses were developed to go undetected by virus scanners—they use a camouflage mechanism which conceals their existence.

Polymorphic Viruses are the most dangerous type of virus. This category consists of viruses which change their appearance with every new infection. They normally do this by re-encoding their virus signature with a random key, which alters from infection to infection.

System Viruses use components, such as the master boot record, partition table and boot sector, as the infection medium.

They spread whenever the affected disk or media is used. For example, Boot Sector Viruses attack the boot sector on floppy disks, or hard disks. The infection spreads slowly as infection can only take place when the system is booted from an infected disk.

Trojans: Coined by former hacker Dan Edwards, and referring to the Trojan Horse used in the mythical battle of Troy, these programs are disguised as something benign; such as a directory lister, archiver, game—and in one notorious case in 1990 on the Mac, a program to find and destroy viruses! These programs open a backdoor, through which anyone with the right tools can take complete control of your PC.

Worms: Taken from 'tapeworm' in John Brunner's novel The Shockwave Rider, these are programs that propagate themselves over a network, reproducing as they go. Perhaps the best-known example is Robert T. Morris' Great Worm of 1988, a benign worm that got out of control, and brought the Internet to its knees.

The Virus Museum

Let's take a few well-known recent examples of such programs to see their modus operandi:

Nimda

According to CERT.org's warning, released on September 18th 2001, the worm modifies Web documents (.htm and .asp files), and certain executable files found on a system, and creates numerous copies of itself under various file names. This worm propagates through e-mail containing an attachment named 'readme.exe', which is a binary executable. Due to a vulnerability in Internet Explorer-based e-mail clients, the enclosed attachment is executed and, as a result, infects the machine. Additionally, it creates numerous copies of itself in all writable directories, (including those found on a network share) to which the user has access.

Klez

This worm and virus combination apparently originated from Asia—possibly China, or Hong Kong. The first infections were

located early morning on the 26th of October, 2001. It spreads a copy of itself via e-mail and network shared drives. It consists of two components, the main worm and a polymorphic EXE virus called ElKern—a Windows executable infector. Similar in working to Nimda, it utilises the exploits for Microsoft Outlook and Outlook Express, which allow the automatic execution of an attachment during its preview.

The worm contains a hidden message targeted towards anti-virus researchers. Most e-mail clients will not show this message. In effect, it says that the author wrote the worm in order to display his capabilities and bag a job. Looks like the dotcom bust had a much deeper effect than we thought.

I Love You

It's just another routine day in your boring life, and you're checking your e-mail. Suddenly, you see a message from someone you've had a crush on since ages. The subject reads 'ILOVEYOU'. Inside, there's a message that seems unbelievable—"kindly check the attached LOVELETTER coming from me". So you double-click on 'LOVE-LETTER-FOR-YOU.TXT.VBS'. Nothing happens, apparently. Dejected, you decide to browse through your collection of beautiful landscapes, or listen to some sad tunes. That's when you realise—not only have you been fooled by a worm—both the program and its author—you've lost most of your files to it as well. Welcome to the club.

The Love Letter computer worm was launched at approximately 8 am GMT, in early 2002 by a teenager in the Philippines. By 2 pm, the virus had already infected more than a million computers, causing in excess of $ 100 million of damage. The final bill was expected to exceed $ 1 billion from lost data, interrupted work and the cost of fixing the damage. This has been one of the worst, most expensive, most pervasive and most damaging viruses in history, according to Internet security company ICSA.net. Playing upon the workings of the human psyche, there's just one word to describe this creation. Brilliant.

Melissa

An Microsoft Word-based macro virus that replicates itself through e-mail, Melissa emerged from nowhere to overwhelm commercial, government and military computer systems. It infects Word 97 and Word 2000 documents, and attempts to start Outlook to send copies of the infected file via e-mail to 50 addresses. Although it does this mass-mailing only once, it has an interesting side effect. If you happen to open, or close a document at a time the minute hand is the same as the date (e.g. 2:05 pm on 5th June), a message referring to the game of

Two Heads are Not Better Than One

Users who tend to be really paranoid might imagine that installing more than one resident monitor might be a good idea. The usual argument of extra resource utilisation might not hold true for someone who has a 3 GHz CPU, 1 GB of RAM and a super-fast RAID hard disk array. However, there's another factor to be considered—about conflicts that might occur while scanning a file in real-time. Since anti-virus programs intercept requests for file access from programs, each active scanner just might end up trying to out-intercept the other. Undoubtedly, the results will be highly unpleasant. So as far as virus busters are concerned, it's best to be monogamous.

Ground Rules for Safety

The truth is, scanners are limited in the protection they can offer you. It's not enough to simply have an anti-virus product, even if you keep it constantly up-to-date. For example, the LoveLetter worm managed to spread world-wide, with no product stopping it for days. You can't just rely upon your anti-virus software to magically protect you against such threats—you have to practice safe computing.

■ If your program supports it, make a 'Rescue Disk Set', which contains files you can use to boot your PC with in a clean state. Keep this set in a safe place.

■ As far as possible, do not disable the resident monitor.

■ Use the Auto Update feature in Windows regularly to download the latest security fixes for Windows applications-including Internet Explorer and Outlook Express.

■ By default, be extremely suspicious of attachments, especially if they're unexpected. Viewing an executable sideshow of funky cars might sound like a lot of fun, but by the time the virus is through with you, you'll want to walk in front of traffic.

■ If you seem to be particularly prone to mysterious attacks, consider disabling ActiveX scripts and JavaScript in your browser's settings. This is an extreme step, but a highly effective one.

■ If you're absolutely paranoid (yes, they're really after you!) and want to nail down everything in your PC, go to **Tools > Internet Options** in Internet Explorer. Navigate to the Security tab and click on Custom Level. Then go about setting all the options (there're plenty of them) to Disable, Prompt, or High Safety. Now your PC's practically watertight!

■ Unless you absolutely need to use macros in Office apps, disable them. This option can be accessed by navigating to **Tools > Options**.

Scrabble is inserted into the document.

What's even more interesting is how the virus got its name. On April 1, 1999 David L. Smith of Aberdeen, New Jersey admitted to creating the Melissa virus shortly after his arrest. Smith said he named the virus after a female stripper he met in Miami, Florida.

On with the tests!

Viruses are spreading at an alarming rate, and tens of viruses—both variants and brand new infections—surface each day (*see table, 'Evolution of Spread Time'*). With the number of users that use the Internet growing by leaps and bounds, it's imperative to have detection and cleaning mechanisms that are updated regularly with the latest anti-virus protection. Let's take a look at some popular anti-virus tools that are meant to secure a home users PC.

We've selected eight of these programs, and run them through some tests to determine the pick of the lot. We reviewed the programs on several

Evolution of Spread Time		
The Internet has resulted in shortening the times it takes for a virus to spread to computers worldwide		
Year	**Name**	**Time**
1990	Form Virus	1 year
1995	Concept Macro Virus	2 months
1999	Love Bug Virus	9 hours
2001	Code Red Worm	2 hours
2002	Nimda Worm	30 minutes
2003	SQL Slammer Worm	10 minutes

counts, with a short description of each parameter listed below:

Ease Of Use: A measure of how easy the program is to install and configure. Ideally, there shouldn't be any configuration required—the program should be fully functional, without having to do anything at all. Plus, how good is the support provided?

Scanning: The aim of the scanning test was to determine the percentage of all malicious code that the antivirus software is able to detect. The results were used with the permission of AV-Test.org(*www.av-test.org*), one of the leading independent authorities in the field of virus testing. This is a project undertaken by the Business-Information-Workgroup at the Institute of Technical and Business Information Systems in Germany, in co-operation with GEGA IT-Solutions GbR.

Scheduling: This determines whether the program provide for scheduled scans that do not require user intervention and how easy is it to set up a custom scheduled scan.

Upgradeability: Any anti-virus program, no matter how good it might be, will become useless in a matter of weeks unless it provides access to the latest engine and anti-virus definition updates. In this category, we measured the period and duration for which free updates are available, and whether these updates are carried out automatically. Also, measured was how frequently the company released its updates.

Resource Utilisation: The amount of system resources used by the program is important enough to be gauged. This category includes the CPU and memory utilisation, and time taken for a full system scan.

All of these tests were run on our top-end test PC—an Intel 3.0 GHz with 800 MHz FSB CPU, Intel D875PBZ motherboard, 256 MB DDR333 RAM, a Seagate 120 GB SATA hard drive, running Windows XP Pro, Version 2002.

AVG 6.0 Free Edition

It's possible to get your hands on a product that provides a lifetime of cash-free service. That's right, Grisoft's AVG is freely available as a download at the company's Web site, with just a couple of catches—it can only be used on a standalone home PC, and not networked office PCs. It's virus detection is not exactly phenomenal, and you'll never get access to online technical support. However, it's a small price to pay for the benefits you get.

The first version of AVG Anti-Virus was released in 1991.

Since then, it's managed to capture half the market in its home country, the Czech Republic, and has looked to gain an entry into the lucrative US market by offering selected services for free. For a program that's completely free of cost, it comes off as the easiest to use package, and one that places the least burden on your system. Fine piece of work, this.

Price: Free ■**System requirements:** Pentium class CPU, 128 MB RAM, platforms supported are MS-DOS, Windows 95, NT, 2000, XP, 98, Me ■**Web site:** www.grisoft.com ■**Grade:** A

eScan Virus Control Edition

MicroWorld Technologies is an Indian company with offices in India and the US. With technologies from Kaspersky Labs, its product, eScan Virus Control Edition has been targeted at securing desktop PCs from virus threats. It consists of an on-demand scanner and a real-time monitor, and includes only anti-virus features, unlike newer products such as eScan 2003.

This Indian entry does manage to exhibit top performance when it comes to detecting viruses, but falls short on user friendliness and configurability. The program interface looks ancient and intimidating as compared to its competitors. MicroWorld certainly has a long way to go as far as understanding its target audience is concerned.

Price: $ 45.95 ■**System requirements:** Pentium Processor, 64 MB RAM, 100 MB free Hard Disk space, Windows 95, 98, NT, 2000, Me, XP ■**Web site:** www.mwti.com ■**Grade:** B+

Anti-Virus 2003

Founded in 1988, F-Secure is headquartered in Helsinki, Finland. It claims that the its products are synonomous with ease of use and low load on systems. Unfortunately, the experience we had was a far cry from what was advertised.

The problem starts from the very moment you install the program. What you download happens to be just a small stub that needs to connect to the Internet to download the rest of the software—something we've never come across in any of the other programs. The result of is that when uninstalled, the program leaves a heap of files behind that need to be manually deleted—a definite no-no as far as ease of use is concerned. The worst part

---

Installing And Configuring McAfee VirusScan 7.0 Home Edition

STEP 1 Run the self-extracting installer. Choose a folder where you want the files to be extracted. Note this location, as you'll have to manually delete these files once the installation completes.

STEP 2 Choose the 'Typical Installation' type and follow the prompts. It'll take just a couple of clicks before the installation gets underway. Once the program installs, it'll automatically initiate a full system scan to flush out any viruses.

STEP 3 Launch VirusScan, if it isn't already open, by double-clicking on its icon in the system tray. If you haven't already registered the program, you'll need to click the link in the main window to launch the registration program. Connect to the Internet, fill in the required fields, and the program automatically downloads the latest updates.

STEP 4 In the Tasks pane, on the left, click on 'Configure automatic protection settings'. All four checkboxes under the VirusScan section need to be checked. Now click on the Advanced button (see pic). As a final step, click again on the Advanced button. Enable the Heuristic Scanning check box and set the radio button to 'Enable macro and program file heuristics scanning'. This might slow down your system a wee bit, but better to be safe than sorry. Click on OK all the way through, and you're done.

CATEGORY				Calculator for Firewalls Test - July 2003				
Developer	Grisoft	Micro World	F-Secure	Network Associates	Symantec	Panda Software	Trend Micro	Cat Computer Systems
Product Name	AVG 6.0	eScan Virus Control Ed.	F-Secure AntiVirus 2003	McAfee VirusScan 7	Norton AntiVirus 2003	Panda AntiVirus Titanium	PC-cillin 2003	Quick Heal X-GEN
Ease of Use (25%)	17.12	12.77	11.14	17.12	15.22	14.67	17.12	13.86
Configurable Features (20%)	6.67	5.00	1.67	17.50	11.67	3.33	11.67	8.33
Scanning (20%)	14.54	18.99	18.73	18.12	16.57	18.25	17.86	12.72
Scheduling (10%)	10.00	6.00	0.00	6.00	8.00	0.00	9.00	6.00
Updating (15%)	11.25	9.84	11.25	10.31	9.84	12.19	11.25	9.38
Resource Utilisation (10%)	10.00	8.00	2.00	6.00	8.00	8.00	8.00	8.67
Overall (Out of 100)	69.58	60.61	44.79	75.05	69.30	56.44	74.90	58.95

is its system load—with a page file utilisation of 30 MB, scan time of 13 minutes (three times more than that of the quickest program), and peak CPU utilisation of 88 per cent, it comes out looking like a sloth in a field of cheetahs.

On the bright side, the program does come a very close second in the virus detection test and has an excellent automatic update feature and interface.

Price: $ 53.00 ■ **System requirements:** Windows 9x, Me, NT 4.0, 2000, XP, Pentium II processor or higher, 128 MB RAM, and 70 MB hard disk space. ■ **Web site:** www.f-secure.com ■ **Grade:** B-

McAfee VirusScan 7.0 Home Edition

Once the top dog in the anti-virus industry, McAfee has had a rough time since mid-2000. No version of VirusScan available at the time was compatible with Windows Me. Bad DAT file upgrades further reduced consumer confidence. Later versions had the unfortunate propensity to corrupt Outlook Express e-mail messages of its users, and were incompatible with Solitaire and FreeCell. Worse, certain versions had problems handling long file paths.

With version 7.0 though, all that is in the past. It turns out to be an all-rounder-providing good virus protection 4th in the virus scanning test, one-click updates, a great interface with oodles of aesthetic appeal, and best of all, a very competent personal firewall and an amazing visual utility to trace the route to any Internet destination. As the topper of our comparison, McAfee's back and it means business.

■**Price:** $ 49.99 ■**System requirements:** Windows XP, 2000 Pro, Me, 98, 100 MHz processor, 32 MB RAM, 61 MB Hard disk space, Internet Explorer 4.01 SP2 ■**Web site:** www.mcafee.com ■ **Grade:** A

Norton AntiVirus 2003

No mention can be made of McAfee without invoking its arch rival Norton AntiVirus (NAV). NAV is one program that viruses take very seriously. The current market leader, most people rely on it to protect them from the bad guys—and with good reason.

With its excellent user interface, extreme configurability, great schedules, and extra long access to updates, it makes for a formidable package. Uninstalling it might prove to be a bit of a pain though. It installs shared files in a separate directory, and refuses to uninstall them even if you don't have any other Symantec product installed. The same goes for its LiveUpdate and LiveReg utilities. After uninstalling the main program, you'll

need to manually go to the Add/Remove Programs, and uninstall both entries, with multiple reboots required. This is really an annoying step considering the lengths NAV goes to ensure user-friendliness. This is the reason it lost out in the overall score and finished fourth.

Price: $ 49.95 ■**System requirements:** 300 MHz processor, 128 MB RAM, 70 MB available hard disk space, Windows XP, 2000 Pro, Me, 98, Internet Explorer 5.0 ■**Web site:** www.symantec.com ■ **Grade:** B+

Panda Antivirus Titanium

Panda Software was set up in 1990 in Spain. During its first years, products were sold exclusively as pre-installed versions with IBM or Tandon. In 1993, it began distributing products to the rest of the market. In 1998, Panda Software became Europe's leading anti-virus software developer, and is currently the fastest-growing anti-virus developer in the world.

It wouldn't be too wrong to say that Panda AntiVirus has literally crawled out of the bamboo work, to pose a serious threat to the dominance of the big players. It struts away with third place as far as raw virus detection goes. This comes as quite a surprise and makes this a program to reckon with. Unfortunately, it falls flat on its face in terms of configurability, giving you almost no options to choose. There's simply no depth in the configuration. It seems to have been designed from the ground up to be idiot-proof. Although that might be a blessing for most users, anyone even slightly experienced will find it an annoyance. In fact, this is the only factor that lets it lose out to its competition. From an extremely aesthetic interface to excellent automatic updates, it's got everything else neatly wrapped up.

Price: $ 39.95 ■**System requirements:** 90 MHz CPU, 32 MB RAM, 20 MB hard disk space, Windows XP, 2000 Pro, NT 4.0 workstation, Me, 98, 95 ■**Web site:** www.pandasoftware.com ■ **Grade:** B

PC-cillin

Founded in 1988, Trend Micro headquartered in Tokyo, Japan, has grown into a company whose products are up there with the best. One product that seems to have it all neatly tied up, PC-cillin can apparently do no wrong. The facts say it all. It comes a close fifth in the virus detection tests. Fifth place out of eight contenders might not seem hot, but if you take a closer look at its scores, you'll find the scanning test was an extremely close battle.

So PC-cillin doesn't lose out too much, despite being in the bottom half. It has a user-friendly interface that provides a vast array of options, a bonus personal firewall, and great

scheduling ability. The icing on the cake is the low load it places on your system.

Quick Heal X-GEN

Started in 1993, Cat Computer Services initially developed copy protection systems. It later diversified into anti-virus software with the development of Quick Heal. This Indian company has become one of the leading Indian developers of anti-virus solutions.

It's heartening to see Indian products that compare with what the world's leaders have to offer. It might have come out at the bottom of the heap in the anti-virus tests, but it's still good enough to make the cut. The program is light in resource utilisation and provides an interface that's pleasing to the eye. Detailed configuration options tie up a nicely made package, apart from a couple of glitches in the interface. With a little more work put into the virus detection, this has the potential of becoming a formidable, yet affordable program.

Who's the strongest of them all?

As far as virus detection is concerned, catching ITW (In The Wild—a term referring to malicious code on the rampage) and Zoo (if the infection has been contained, it's said to have been placed in the Zoo) viruses is of utmost importance, and they have been given the most weightage in the virus detection tests. In this category, there is hardly any difference in the performance of the contenders, each of them catching practically all viruses. Where they significantly differ is in the treatment of viruses that exist in compressed files, documents and spreadsheets. In the end, MicroWorld's eScan comes out tops.

However, raw virus detection should never be taken as the only measure of a virus-buster's performance. eScan is a classic example of this. It uses the Kaspersky Labs engine, which is a really powerful virus eliminator. However, any newbie would be daunted by the awkward interface it has. It's a real pity, because ease of use is all it would've needed to beat the competition hollow.

So, user friendliness is another desirable quality of a program. In this category, AVG, McAfee, and PC-cillin share the honours. Each scored more in certain counts and a little less in others. McAfee also managed to score where it mattered most— in the equally significant test of the configurability of the program. Here, it beat the competition hands down, enabling it to come out tops in the overall scores.

BADRI NARAYAN

1/2 pg HAD

The Spy Within

U nknown to most PC users, information is stolen from within our PCs every day. Personal details, knowledge of our surfing habits, even passwords and credit card information are at high risk of being stolen. How, you ask? Spyware— small applications in our own computers which collect and push the information to the creator of the application.

What is Spyware?

Renowned security expert Steve Gibson of GRC.com describes spyware as "any software which employs a user's Internet connection in the background—the so-called backchannel—without their knowledge, or explicit permission. Silent background use of an Internet backchannel connection must be preceded by a complete and truthful disclosure of proposed backchannel usage, followed by the receipt of explicit and informed consent for such use. Any software communicating across the Internet, and missing these elements, is guilty of information theft and is properly and rightfully termed: Spyware." This broad definition includes Trojans, remote administration tools, key loggers and other similar hacker tools. How bad, or dangerous a particular piece of spyware is, depends on three things— what type of information it gathers, what the company collecting the information does with it and if the user's

GAIN's ads indicate that they are from Gator

consent was taken before collecting this information.

The information gathered could be benign, such as your surfing habits and interests, or it could be far more important, such as personal details and sensitive data. Information about your interests and the sites you've visited can be used for your benefit, so that advertisers show advertisements that you find interesting or recommend purchases that would appeal to you. These tools which display targeted advertising, based on the information they collect about you, are called Adware, and are the most common form of spyware. The Gator Advertising and Information Network (GAIN) is a very good example of adware. The company proudly claims to have 35 million users who advertisers can reach directly in the form of pop-up ads. Gator.com though, are open enough to admit they also deliver advertisements, information and software, based on the Web sites you view.

Some browser cookies, also known as Tracking Cookies, can be considered as the most basic form of spyware—especially when Web sites store your personal details, without your knowledge, and the same is accessible to others. Normal cookies are mostly harmless, and almost always improve a user's Internet experience. Simple examples are cookies that remember login information, or message boards that show you what's new since the last time you visited. A major distinction here is that tracking cookies are not hidden and the user has the option to disable them along with other cookies.

Key loggers and Trojans usually have a more sinister use. Key loggers are small applications that run in the background and record every key that you type. They can collect a wealth of information: passwords, credit card details, private e-mails, chat sessions... everything. This information is stored locally in a log file, and can be silently sent out via e-mail. Trojan's are small programs that let a remote user take complete control of your PC, and perform some impressive feats, such as monitoring your system, scanning your drives, stealing files and even installing tools such as key loggers. Fortunately Trojans are removed by most anti-virus tools today, and have since, become less common.

But I never installed any spyware!

Most of the spyware you find on your home PC has been installed by you, albeit unknowingly, along with some other application. Popular peer-to-peer file sharing utilities, such as KaZaA and Morpheus, which are distributed free to users, install adware elements when you install the program. Companies do this to support the large development costs associated with making a good application and keeping it free. In effect, the adware pays for the development, and you get the applications without paying, but not without a price—the loss of your privacy.

These companies are quite blatant about their activities. When questioned, they simply ask users to "read the fine print"; the End User Licence Agreement (EULA)—the bit that we don't read, and 'Agree' to without hesitation. These EULAs are very shrewdly written, so as to conceal from the user the fact that his, or her personal information will be collected.

Even more sinister are drive-by downloads. These are tools which automatically install themselves when you visit a Web site or click on a misleading link. They usually install themselves as toolbars, add a few shortcuts to your browser's Favorites list, and make themselves your home page. Even if you change the

Pest Control

The occurrence of Adware and associated pests over a 28 day period	
Pest	Count
Adware	189,319
Peer-to-peer	65,103
Spyware	35,553
Spyware Cookie	17,134
Browser Helper Object	16,839
Worm	2,919
Hijacker	1,447
Dialer	1,193
RAT	797
Key Logger	602

Source: PestPatrol.com

home page later, these tools will reset it again without asking.

At the heart of the problem is the lack of awareness. These applications hide within the dozens of programs that run when you start your PC. Trying to manage the processes running in Windows, or the programs starting up with Windows, has always been difficult. Most executables have cryptic file names, leaving you clueless as to which can safely be disabled.

Long license agreements contain fine print

Help is at hand

All users should have good anti-virus software and firewalls installed. One would think this is enough to keep you secure, but it's hardly adequate. Some of the better anti-virus software will effectively detect, and remove a lot of the known Trojans. Other types of spyware are ignored by these tools, making them ineffective. Firewalls should prevent spyware from sending out any information, but they only feature program control, which allows you to specify which programs have access to the Internet. This only works when there is a dedicated spyware program, with a separate process attempting to send out information. Spyware that piggy backs on popular applications may use their host application to transmit whatever data they need to. Spyware creators can capitalise on this fact to get past your firewall. Since the combination of anti-virus and firewall are not enough, a dedicated anti-spyware system is required.

Removal of spyware is never a hundred per cent accurate, and it's nearly impossible to verify. Some applications that come bundled with spyware, do not work when the spyware elements are removed. You need to re-install the application—which just re-installs the spyware. Other more intelligent applications re-install the spyware automatically when you run them.

How we tested

All our testing was done on a 2.4 GHz Pentium 4 CPU running Windows XP Professional. We selected sev-

eral applications known to contain spyware, and installed them all on the target PC (see box, 'The Usual Suspects'). We then installed one of the anti-spyware tools and ran it without changing any of the default options. The number of spyware objects found was recorded, and then the tool was permitted to clean out whatever it found. We then attempted to run the applications containing spyware. The process was repeated for the remaining anti-spyware tools. All the tools tested were the freely downloadable versions that were available at their respective Web sites. Full versions can be purchased online.

Spybot

PepiMK Software's Spybot is a comprehensive Adware and Spyware remover, at the best price ever—it's free! The installation is easy enough, and is fairly quick. You get a warning message telling you that removing some spyware may prevent some of your other software from functioning or could go against their licensing policies. The program's interface takes a minute to figure out, but is very straightforward in its use. Using all the default options, scanning for spyware is very quick, taking less than a minute on our test rig. The scan showed up 34, objects and listed them along with their paths. Clicking on an object brings up a very comprehensive description of what it is—the type of spyware it is, the possible level of risk, what that program or file does to your system, and even an overview of the company's privacy policy. This is more than enough for you to make an informed choice of what to keep, and what

Spybot: Searching and destroying!

should go. In this regard, Spybot provided more information and made it more accessible than any of the other tools tested here. However, Spybot failed to detect some elements of spyware from Kontiki, Cydoor and WurldMedia. Any Spyware applications that are running during the scan are cleared out after a restart.

Price: Free ■ **Web site:** http://spybot.eon.net.au/ ■ **Grade:** A-

*see offer on page 94-95

The Usual Suspects

KaZaA Media Desktop: A popular file sharing application that contains Cydoor and WhenU's SaveNow adware and spyware.

Morpheus: A file sharing application that has My Search Bar and Shopping Community programs bundled with it. These are not removed, even when you uninstall Morpheus.

Download Accelerator Plus (DAP): An adware supported download manager which shows its own banner ads.

CNet's Download Manager: An application, powered by the Kontiki Delivery Network, that integrates with download.com for downloading large files.

Weather Bug: This program gives you the local weather, along with forecasts for the days ahead. It is supported by Gator.

PestPatrol

Pest Patrol seemed to be very promising, based on the information on their Web site. The site has very detailed information on all the types of spyware. The program itself claims to block several thousand known spyware objects. When we first ran PestPatrol, it scanned for a couple of minutes and found no spyware objects. Surprised by the results, we started from scratch. This time the scan was painfully slow, but it found over 500 pests. The information is presented in a table with a fair amount of information—the name of the pest, category it belongs to, a short description of what it does, the level of risk it poses, and whether PestPatrol has confirmed that it is actually the spyware that it is suspected to be.

Unfortunately, a lot of the results were just suspected pests and not confirmed as spyware. The interface is a little awkward, and the

Spyware objects found in Pest Patrol

program's options are extensive but hard to access. Options let you decide where to scan, what types of pests to scan for, what folders should be excluded, etc. Automatic scanning at system startup is available, but not enabled by default. Pest patrol has real-time memory monitoring with a system tray icon. From there the program can also update itself when you're online. Yet it's hard to recommend this commercial tool over the better free tools tested.

Price: $ 39.95 ■ **Web site:**www.pestpatrol.com ■ **Grade:** B-

Ad-Aware

Ad-Aware is the most well known of the tools we tested. Now in its sixth incarnation, Ad-Aware remains free, but advanced features such as real-time protection are only available in the commercial versions, namely Ad-Aware Plus and Professional. After installing and running the program a starting screen gives you an overview of the current system status. From there you can click Start, and simply follow the instructions to begin a scan.

The first screen gives plenty of details at a glance

Ad-Aware does a very thorough job of detecting and removing spyware. It also impressed us with its speed. The detection process took a just over a minute, with the default options, and the cleaning took under 10 seconds. The results are presented in a table but the

Stay updated

Anti-virus tools make use of advanced techniques to detect possible viruses—files that show 'virus like' behaviour. Anti-spyware tools do not normally implement such techniques, because of the high rate of false alarms that would be generated, and useful files maybe deleted. They rely heavily on their database of known spyware. This makes it essential for you to keep the software up to date.

Becoming proactive

Putting in a little effort will ensure you don't get spyware on your PC in the first place. You should find out before you install software if it contains spyware. A good way to do this is to visit www.spychecker.com and enter the name of the software in the search box. The results tell you what type of spyware (if any) it contains. Then its up to you to decide if you want to use it or not.

information provided here is limited—you have to right-click each item, and select 'Item Details' for additional information, and this information wasn't much either. Ad-Aware missed a few objects that the other tools caught, but did a thorough job overall. You can scan within archives, but that would increase the time taken. The program can start with Windows, and has automated scanning features. Ad-Aware remains a solid and reliable choice for clearing out spyware.

Price: Free ■ **Web site:** www.lavasoftusa.com ■ **Grade:** B+

X-Cleaner

X-Cleaner is a privacy tool that does a lot more than clear spyware. This tool is very small in size but has a whole host of features. It removes several types of spyware, shreds (permanently deletes) files, manages your startup programs, generates complex passwords, and updates itself automatically. Click the Start Cleaning button and it starts scanning for known spyware, and then

X-Cleaner prompts an action for each object it finds—one at a time

presents the option to clean one spyware object at a time. The program was intelligent enough to find an uninstaller for the spyware bundled with KaZaA, and started the uninstall process for us. This is a lot better than just blindly deleting all the spyware objects found. This is time consuming however, and will require some patience. Disappointingly, X-Cleaner did not detect a lot of our test spyware.

Price: $ 39.95 ■ **Web site:** www.xblock.com ■ **Grade:** B

Spy Sweeper

Webroot Spy Sweeper is a shareware spyware removal software. The common features of the program are available for use free of cost. It is capable of identifying and removing Adware, cookies, data-mining programs and Trojans.

The program is installed in less than 30 seconds, and an option is given to update the spyware definitions. The scan time on the test bed took 2 minutes, and 20 seconds. The program tracked 9 spyware agents

The smartest looking interface of the bunch

CATEGORY	The Final Tally				
Anti-Spyware	Features	Speed	Ease of use	Spyware blocked	Overall
Spybot S&D	4	5	3	4	4
PestPatrol	3	2	2	4	3
Ad-Aware	3	4	4	4	4
X-Cleaner	4	2	4	2	3
SpySweeper	4	3	4	4	4
Spyware Remover	4	2	3	2	3

and 156 associated traces in the system. After the search, the agents are placed in quarantine, and can be removed later. The spyware can then be removed from the system using the remove option. A nifty feature of Spy Sweeper is that it un-installs most applications that may not work after spyware removal—KaZaA failed to operate after the check, DAP and Weatherbug were un-installed. The cleaning time taken was 14 seconds.

Spy Sweeper features real-time protection. It protects your browser from changes in the home page settings, and also monitors the memory, and detects if any spyware is loaded in active memory.

Price: $ 29.95 ■ **Web site:** www.webroot.com ■ **Grade:** B+

Spyware Remover

BPSS is an anti-spyware program that is loaded with features to protect you from menaces on the Internet. But the program is quite unstable and did not work reliably on our test bed.

The installation of BPSS is simple, but the scan time for the program was quite long—about 3 minutes. The results were shown in a checklist, where the spyware components could be deleted. But the program crashed and only a few components were deleted.

The program also bundles a real time monitor, which displays spyware components as they are used. Pop-ups can be kept in check using the included pop-up program. The Internet connection settings can be restored using the program. Also, programs containing spyware can be tracked and totally un-installed.

Spyware Remover's simple interface with buttons to access most features

Price: $ 29 ■ **Web site:** www.bulletproofsoft.com ■ **Grade:** B-

The plot thickens

The thing that became immediately apparent to us is that Anti-Spyware tools still have a long way to go. Each tool removes certain spyware, but there's always leftovers that others find and remove. What is missing is a clear definition of what these tools are supposed to remove.

So, which one should you use? On the basis of our tests Spybot comes out marginally ahead. But we can't conclusively say that any of these tools provide complete protection against all spyware. We suggest that you use two tools together—Spybot and Ad-Aware is the best combination. Remember that new spyware finds its way to your PC every day, so keep your anti-spyware tool updated, and run the scans regularly. If you do this, you can rest assured that your computing life will remain relatively private. ■

KAIZAD VAJIFDAR

A-List Reviews

**A listing of the best products in different hardware and software categories**

Every Digit reader must surely be aware of the various comparison tests we do at our Digital Test and Research Centre. The comparison includes various products from all categories. They range from motherboards to keyboards, and other cool gadgets such as digital cameras and MP3 players. We grade these products based on their performance, features and their merit as per the money you pay for it. The 'A' listed products are those which are truly the best among the best. What we are giving here are products that you can safely bet on. When you buy one such product, you can be absolutely sure that it will perform up to the mark you expect. Read on to find out more about the product you have been hunting for all this time.

CPU + Motherboard

Pentium 4 3.06 GHz
+ Ultra Fast
– requires a really deep pocket
Specifications: 533 MHz FSB, 512
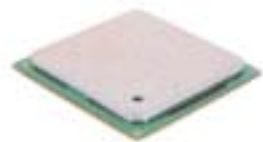
KB L2 cache, HyperThreading enabled
Contact: Nebula Technologies
Phone: 022-6730567
E-mail: pratik@nebulatech.com
Price: Rs 41,500

MSI 845PE Max2
+ Chock-full of features
– No serial ATA support
Specifications: Intel 845PE chipset, HyperThreading enabled, onboard 5.1 channel sound, FireWire, Gigabit Ethernet, RAID controller, USB 2.0, six PCI slots, AGP 4X
Contact: Priya Ltd
Phone: 022-2663611
E-mail: salesbom@priyagroup.com
Price: Rs 7,200

Display

LCD
SONY SDM-N80 18.1-inch LCD Monitor
+ Stylish looks combined with great performance
– External power supply takes up extra space.
Specifications: 18.1 inch a-Si (Amorphous-Silicon) TFT Active

matrix panel, 1,600 x 1,200 maximum resolution, two USB ports, external power supply with connections for alternate display source, sound connectors, Mac-compatible display connection
Contact: Rashi Peripherals
Phone: 022-28260258
E-mail: ho@rptechindia.com
Price: Rs 1,49,000

CRT
BenQ V991 - 19-inch
+ High resolutions, great performance
– No extra accessories
Specifications: 19-inch CRT (18-inch viewable size), 0.25 dot pitch, Shadowmask CRT type, 115 MHz video bandwidth, flat picture tube, MPR II, TCO 99

emission standards compliant
Contact: Benq India Pvt Ltd
Phone: 022-25705231
E-mail: salesenquiryin@benq.com
Price: Rs 12,999

Printer

Laser
Canon LBP 1120
+ High-quality prints, low cost
– Low buffer memory
Specifications: USB and parallel interface, 1,200 dpi, 512 KB buffer memory, 250 sheet

paper tray
Contact: Canon India Ltd
Phone: 011-26806572
E-mail: brijesh@canon.co.in
Price: Rs 16,995

Inkjet
Canon S530D
This inkjet is packed to the hilt with features. From USB 2.0 support, to the ability to interface with Compact Flash cards for direct camera printing, this device has got it all. These features and its excellent print quality justify its high price tag
+ Feature-rich
– High costs
Specifications: USB interface, 2,400 x 1,200 dpi (colour)
Contact: Canon India Ltd
Phone: 011-26806572
Email: brijesh@canon.co.in
Price: Rs 21,747

Scanners

HP Scanjet 4570C
+ Excellent scanning performance
– Heavier and bulkier
Specifications: 1,200 x 1,200

optical resolution, USB interface, 48-bit colour depth
Contact: Hewlett Packard India Ltd
Phone: 011-28260000
Email: ashwini-k_aggarwal@hp.com
Price: Rs 17,999

Primary Storage

Maxtor 250 GB DiamondMax 16
+ Tons of space
– Low cache
Specifications: 5,400 rpm, 2 MB cache, ATA 133 interface
Contact: Cyberstar
Phone: 011-6438216
E-mail: yogi@maxtor.com
Price: Rs 22,500

Secondary Storage

MSI CD-RW CR52-A2
+ Can read and write 90 minute CDs
– Small problems with CDs

written at 52X
Specifications: 52X write, 24X rewrite, 52X read speeds, IDE interface, 2 MB buffer, Exact-Rec and AWSS technology, BURN-proof, supports up to 790 MB disc capacity, horizontal and vertical mounting
Contact: Cyberstar Infocom Ltd
Phone: 080-2276986
E-Mail: narend@cyberstarin.net
Price: Rs 4,100

Input Devices

Microsoft Multimedia Keyboard
+ Great feel
− Comes at a high price
Specifications: 16 hotkeys, PS/2 interface, wrist support

Contact: Microsoft Corporation Pvt Ltd
Phone: 011-26292640
Email: connect@microsoft.com
Price: Rs 1,600

Microsoft Wireless Intellimouse Explorer
+ High precision and sensitivity
− Batteries make it heavy
Specifications: Optical mouse, USB interface, two extra buttons, 2 AAA batteries, infra-red, cordless
Contact: Microsoft Corporation Pvt Ltd
Phone: 011-26292640
Email: connect@microsoft.com
Price: Rs 3,380

Graphics Cards

Gainward FX 5800
+ Future-proof
− Gets very hot
Specifications: 128 MB DDR II memory, 0.13 micron, maximum resolution 2,048 x 1,536 at 85 Hz, AGP 8X, 128 MHz, RAMDAC speed 500 MHz
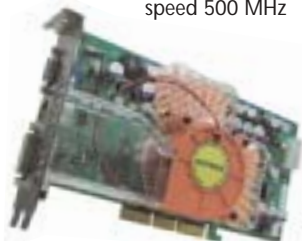
Contact: Mediatech India Pvt Ltd
Phone: 022-56396696
Email: sales@mediatechindia.com
Price: Rs 37,975

Sound Cards

Creative SoundBlaster Audigy 2 Platinum
+ 6.1 channel outputs
− Not even remotely affordable
Specifications: DVD-Audio capability (24-bit with 192 KHz in stereo and 96 KHz in 5.1), 106 dB signal to noise ratio, 6.1 surround sound capability, EAX Advanced HD support, WMA 9 support, FireWire port
Contact: Creative Technology Ltd
Phone: 9820357713
Email: rajshekhar_bhatt@ctl.creative.com
Price: Rs 15,500

Speakers

Creative Megaworks THX 5.1 550
+ Mindblowing sound
− No digital inputs
Specifications: 5.1 speakers, 150 W RMS subwoofer, 5 X 70 W RMS satellites, Frequency range 25 Hz to 20 KHz, 99dB SNR
Contact: Creative Technology Ltd
Phone: 9820357713
E-mail: rajshekhar_bhatt@ctl.creative.com
Price: Rs 25,500

Mobile Phones

Sony Ericsson P800
+ Easy navigation
− Too many features for the average user
Specifications: Symbian 7.0 OS, expandable memory, excellent PDA functionality, triband, GPRS, WAP
Contact: Sony Ericsson Mobile Communications International
Phone: 011-26180808
E-mail: sudhin.mathur@sonyericsson.com
Price: Rs 39,995

Digital Cameras

Olympus C-5050ZOOM
+ Allows external memory in various formats
− Relatively lesser memory
Specifications: 5 megapixels, maximum resolution 2,560 x 1,920, optical viewfinder, Auto focus, CCD sensor, 1.8 inch TFT colour LCD display, 3X optical zoom, support for RAW, JPEG, TIFF picture formats
Contact: Komal International
Phone: 022-22631366
E-mail: indiaolympus@vsnl.com
Price: Rs 49,995

MP3 Players

Apple iPod 30GB
+ More space than you'll ever need
− Costs more than you can ever afford
Specifications: 30 GB storage capacity, up to 25-minute skip protection, 2-inch (diagonal) greyscale LCD with LED backlight, dock connector, remote connector, stereo minijack, Audio support for Mac: AAC (16 to 320 Kbps), MP3 (32 to 320 Kbps), MP3 VBR, Audible(6), AIFF, WAV; Audio support for Windows: MP3 (32 to 320 Kbps), MP3 VBR, WAV; size: 4.1 x 2.4 x 0.73 inches; weight 176 gm
Contact: Telecompac Infosys
Phone: 011-26688171
E-mail: bally@del3.vsnl.net.in
Price: Rs 32,000 for 30 GB, Rs 26,000 for 15 GB, Rs 21,000 for 10 GB

Laptops

Acer TravelMate C100 Convertible Tablet PC
The TravelMate C100 bridges the functionality gap, linking the portability and intuitiveness of a Tablet PC with the connectivity and flexibility of a notebook. Featuring a clamshell design, this baby can be used as a traditional notebook, or a tablet PC. Based on the Windows XP Tablet PC edition, the TravelMate C100 is extremely easy to carry around and work on while in tablet PC mode
+ Easy to carry around and work with
− Slightly sluggish performance

Specifications: 800 MHz ultra low voltage mobile Intel Pentium III processor, 256 MB RAM, 10.4-inch TFT LCD display, 30 GB hard drive, USB (x2), Ethernet RJ-45, modem RJ-11, IEEE 1394 (FireWire), infra-red, optional 802.11b wireless LAN, five launch keys, four-way scroll key, built-in microphone and speakers, Smart-Card slot, Type II PCMCIA slot
Contact: Acer India Pvt Ltd
Phone: 080-5219520/23
E-mail: ailenquiries@acer.co.in
Price: Rs 1,59,990

PDAs

Sony CLIE PEG-TG50
+ Great combination of features and performance
− Rapid battery consumption
Specifications: 200 MHz processor, 16 MB ROM/RAM, Palm OS 5, Bluetooth and IR capable, high resolution 320 x 320 TFT display with backlights, integrated keyboard with backlight, USB interface, Li-Ion rechargeable battery, built-in voice recorder and MP3 player
Contact: Solar Systems
Phone: 022-56916834
E-mail: solarsystems@vsnl.net
Price: Rs 27,000

Bazaar

We test the latest and the best hardware and software products available in the market

Bose MediaMate
The audiophile's desktop companion

The MediaMate speakers are designed to address all the needs of today's multimedia user. They provide a rich, deep-bass performance, in addition to their superb sound.

The speakers are endowed with a spaciousness-enhancing circuitry that produces a good pseudo-surround effect. Special proprietary circuitry provides unbelievable bass at low listening levels. The only sore point was the lack of an On and Off switch, and a power indicator.

These speaker sets are expensive—for the same price you can buy a 6.1 speaker set for an immersive sound experience. The MediaMate are targeted at the brand conscious audience who don't mind paying the extra bucks for the Bose name.

SPECIFICATIONS

Full range stereo speakers, two RCA inputs, stereo headphone jack, 8.9 x 21.6 x 19.1 cm

Price: Rs 9,800
Contact: Bose Corporation India Pvt Ltd
Phone: 022-28324537/ 79
Fax: 022-28324579
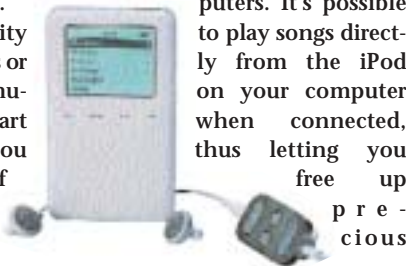**E-mail:** bose_store@sify.com
Web site: www.bose.com

Bose MediaMate					B+
Performance	▶	▶	▶	▶	▶
Build quality	▶	▶	▶	▶	▶
Value for money	▶	▶	▶	▶	▶
Features	▶	▶	▶	▶	▶
OVERALL	▶	▶	▶	▶	▶

Apple iPod 30GB
The apple of your ears

With a storage capacity of a whopping 30 GB, this baby confirms to the 'fill it, shut it, forget it' *funda*. The 25-minute skip protection ensures that it can be the perfect jogging companion.

The iPod's capacity translates into 500 hours or about 3 weeks of continuous playback. A 'Smart Playlist' feature allows you to rate songs on a scale of 1 to 5. Higher rated songs play more frequently when the shuffle mode is on.

You can also use the device as a portable hard drive to transfer any kind of data between different computers. It's possible to play songs directly from the iPod on your computer when connected, thus letting you free up precious space on your hard drive.

Starting from the interface, computer connectivity and transferring the music, the iPod is a breeze to use. The provided earbud-style earphones produce crystal clear music. If you are an audiophile and can't think of leaving home without music, the Apple iPod is the portable digital music player to own.

SPECIFICATIONS

30 GB capacity, 2-inch greyscale LCD with LED backlight, Audio support for Mac and Windows, 4.1 x 2.4 x 0.73 inches, 176 gms, FireWire interface, USB adapter sold separately

Price: Rs 32,000 for 30 GB, Rs 26,000 for for 15 GB, Rs 21,000 for 10 GB
Contact: Telecompac Infosys
Phone: 011-26688171
Fax: 011-26685817
E-mail: bally@del3.vsnl.net.in
Web site: www.apple.com

Apple iPod 30GB					A-
Performance	▶	▶	▶	▶	▶
Build Quality	▶	▶	▶	▶	▶
Value for money	▶	▶	▶	▶	▶
Features	▶	▶	▶	▶	▶
OVERALL	▶	▶	▶	▶	▶

Seagate Barracuda ST380023AS
Goodbye PATA, hello SATA

The ST380023AS is one of the first SATA drives to enter our markets. It supports a maximum theoretical speed of 150 Mbps, but the HDTach test pegged the score at 55.6 Mbps, with an alarmingly high CPU utilisation of 21 per cent.

It doesn't offer any real performance benefits; the only significant feature is the mammoth 8 MB cache—all the performance gains are only due to the extra cache. This isn't because of the SATA interface, but because hard disk technology isn't advanced enough.

This drive costs 40 per cent more than Seagate's 80 GB Parallel ATA drive. Although rooted to be the future of storage technology, the performance of the Barracuda is not up to theoretical expectations, and the price is too high.

SPECIFICATIONS

80 GB, 7200 rpm, 8 MB internal cache, internal transfer rate up to 570 Mbps, external transfer rate up to 150 Mbps, sustained transfer rate of 27 to 44 MBps, average latency 4.16 ms, average access time 9.4 ms

Price: Rs 10,000
Contact: eSys Distribution Pvt Ltd
Phone: 011-26420450
Fax: 022-23879020
E-mail: naresh@esysmail.com
Web site: www.seagate.com

Seagate Barracuda ST380023AS					B
Performance	▶	▶	▶	▶	▶
Build Quality	▶	▶	▶	▶	▶
Value for money	▶	▶	▶	▶	▶
Features	▶	▶	▶	▶	▶
OVERALL	▶	▶	▶	▶	▶

Samsung SGH-S300
Live life in 16-bit colour

This new Triband handset with 16-bit colour from Samsung weighs only 76 grams and easily fits into your pocket. However, many people will criticise the long antenna, which interferes in handling the phone. The keys are big and very readable—even in the bright open areas. However, one glaring error is the placement of the [C] key below the scroll key. Due to this, your thumb unconsciously presses it while scrolling or entering the menus.

The external display is greyscale and displays the date, time, arrival of a new message, battery level and also flashes the incoming number. Unlike Nokia phones, the backlight timing can be adjusted to Long, Short, Medium, etc. and most importantly, the display is bright and vibrant. One shortcoming that we found is that the backlighting for the external display is automatically switched on when you open the phone, causing excessive energy consumption.

Surprisingly, the menu is very similar to Nokia phones. You can navigate the menu system in two ways—Page-wise and Folder-wise. Another nice feature is the presence of pop up information when selecting any of the internal features of a menu. This prevents you from unnecessarily entering the submenus.

The phone supports Long Messages, and also allows you to format your text. However, you cannot create folders and organise your messages, neither can you assign a ring tone as an Alert Tone. Another thing we found amiss was you that can't forward messages to more than one person at a time.

This phone is packaged with a neat set of features. However, its many flaws will be a point of concern, especially if you take into consideration the staggering price you have to pay.

Price: Rs 24,399
Contact: Samsung Electronics India
Phone: 011-51511234
Fax: 011-51608821
E-mail: chandrasekar@samsungindia.com
Web site: www.samsungindia.com

SPECIFICATIONS

Tri-band, 80 x 40 x 20 mm, 128 x 128 pixels internal display, four-way navigation keys, dynamic font size, EMS, MMS receive only, polyphonic sounds, Java embedded, WAP 1.2.1, T9, currency converter, calendar, To Do list, speed dial, menu shortcuts, world clock

Samsung SGH-S300					B
Performance	▶	▶	▶	▶	▶
Build Quality	▶	▶	▶	▶	▶
Value for money	▶	▶	▶	▶	▶
Features	▶	▶	▶	▶	▶
OVERALL	▶	▶	▶	▶	▶

Hotcard Bizcard Finder
Your very own portable digital cardholder

Hotcard's Bizcard Finder is a portable device that can convert the A8 sized cards you have, to a digital format. This USB 1.1 card reader is an easy-to-carry, portable device that connects to your laptop. Once scanned, all contact details of the card are automatically stored in predefined categories. The bundled software included in the package converts the scanned image to a database of contact details.

First, you need to insert the empty card, provided in the box, to calibrate the scanner. The scanned image of the card is then shown with a grid layout for each contact detail. We scanned over 30 cards and the scanning accuracy was a little low with embossed cards.

The default file type of the saved contacts is DAT. The manufacturers have also provided the ability to export the list of contacts to Outlook's address book, the CSV (Comma Separated Values) format and Dbase III. The recommended option is to export it to the DBF format, which can be opened in MS Access.

Price: Rs 7,000
Contact: Questa Software Systems Pvt Ltd
Phone: 022-28844737
Fax: 022-231012863
E-mail: sales@questasoft.com
Web site: www.hotcardtech.com

Synchronisation of the database to cell phones and PDAs is a useful feature, but only limited to the brand names mentioned in the software—the Motorola 388, Minren PDA, Shang-WuTong PDA, Palm Address, WinCE contacts and Bizcard Finder.

Even though the device is a fine piece of hardware, the interface between it and the software is not up to standards. Within these limitations though, this product performs to expectations, and is a viable alternative to traditional card holders.

SPECIFICATIONS

USB 1.1 interface, scans a maximum of A8-sized cards

Hotcard Bizcard Finder					B+
Performance	▶	▶	▶	▶	▶
Build quality	▶	▶	▶	▶	▶
Value for money	▶	▶	▶	▶	▶
Features	▶	▶	▶	▶	▶
OVERALL	▶	▶	▶	▶	▶

Sony CLIE PEG-TG50
Work on the move while having fun

The CLIE runs on the Palm OS 5 operating system, which takes up 5 MB of the available 16 MB memory. Some of the things the CLIE can do is to act as a voice recorder, MP3 player and even a gaming device when used with a game controller. A speaker at the back of the CLIE outputs good quality sound. However, it'd be better to use a headphone, which Sony has unfortunately not included with the product. When used as a voice recorder, the CLIE performed well and recorded with good clarity. The CLIE also has a REC button on the side for easy operation. The other buttons on the side include the Jog Dial for scrolling, a Back button whose function is similar to the Escape button function and of course the Power and Hold button.

Data entry into this device can be done in three ways. The common ways are through the digital keyboard and the Graffiti (text entry through handwriting recognition) area. The integrated keyboard below the LCD is the third mode of data entry. Come to think of it, most of the time, when anyone uses the CLIE, it will be held in one hand and the stylus will be in the other, so

it's difficult to use the conventional keyboard. It could also have been a lot better if all the keys had a depression in the centre, similar to the home and search keys, so that the stylus could be used for pressing the keys. The keys are too slippery to press with the stylus, and too small for convenient typing. It just ends as a waste of precious real estate.

It's best to get used to entering data using the Graffiti area because of the ability to define your own abbreviations for long words, such as 'br' for breakfast. You will need to get used to the Graffiti area, with the help of the character set provided by Sony.

To play songs, or see short movies, or for backup, an external memory stick is needed, because of the memory constraint of the CLIE. Another disadvantage of using the CLIE for multimedia is the rapid battery consumption.
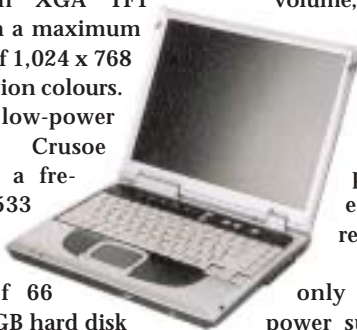
For connectivity with

Price: Rs 27,000
Contact: Solar Systems
Phone: 022–5691 6834
Fax: 022–2854 9184
E-mail: solarsystems@vsnl.net
Web site: www.sonystyle.com

other devices, the device comes with IR and Bluetooth capabilities. There is also a game—*Reversi*—that can be played with another compatible Bluetooth device.

This feature-rich, hi-tech, device costs a few thousands extra as compared to some other PDAs, but is less than the cost of similar PDAs that have Bluetooth capability. Its performance is excellent, but the absence of a cradle for the stylus is a problem. Apart from that, the wide range of accessories makes it a gadget you'll certainly love to have!

Sony CLIE PEG-TG50	A-
Performance	► ► ► ► ►
Build Quality	► ► ► ► ►
Value for money	► ► ► ► ►
Features	► ► ► ► ►
OVERALL	► ► ► ► ►

Mercury Desknote A-907

Carry the book and the desk together

Kobian has released the Desknote, an intermediate between notebooks and desktop PCs. It is a black and silver notebook that features a 14.1-inch XGA TFT screen, with a maximum resolution of 1,024 x 768 with 16 million colours. It uses a low-power Transmeta Crusoe TM5600 at a frequency of 533 MHz with a front side bus of 66 MHz. A 20 GB hard disk drive is provided, and it ships

with Windows 98 SE. It also has a low-end Mitsumi 24X CD-ROM.

Hotkeys are provided for increasing and decreasing the volume, launching the e-mail client and a some other miscellaneous functions. The keypad area is big enough for you to rest your palm.

Desknote runs only on continuous power supply from the AC mains—no battery is

provided. The lack of a battery reduces the overall weight of the Desknote to 2.2 Kg, with a dimension of 320 x 265 x 39 mm.

Desknote is meant as a space-saving replacement for a desktop PC. It's priced too high, compared to a second hand laptop that would offer a better configuration and much more portability.

Price: Rs 47,000, plus taxes
Contact: Mega Infosolutions
Phone: 022-24083903
Fax: 022-24091748
E-mail: rohan@meganet1.com
Web site: www.desknoteindia.com

Mercury Desknote A-907	B
Performance	► ► ► ► ►
Build Quality	► ► ► ► ►
Value for money	► ► ► ► ►
Features	► ► ► ► ►
OVERALL	► ► ► ► ►

Adobe Acrobat Professional 6

Added flavours, but will they be savoured?

Adobe Acrobat has grown from being a mere X-platform print format, to a complete workflow system. Adobe has finally split Acrobat Writer into three flavours—Acrobat Elements, Acrobat Standard and Acrobat Professional. These differ from each other in features and price. By far, Adobe Acrobat Professional is the most enhanced version with something for almost everyone.

Acrobat Professional brings along with it Flash support, improved prepress, collaboration, review and commenting features, improved JavaScript support and an in built debugger for JavaScript. Users in the multimedia segment can now integrate Flash movies within PDF files. The layers remain intact within the PDF, when converting Photoshop images to PDF files. It takes a toll on the hard disk space, but file sizes can be kept under control by using the Reduce File Size and PDF

Optimizer features. It has loads of features built into it, but the question is, how many users will ever need these features, and be willing to pay for them?

End users would be better off with some cheaper third party PDF creators.

Large organisations, might find the workflow solutions bundled along with the PDF creator a good deal.

Price: Rs 23,500 (Upgrade - Rs 7,400); Standard - Rs 15,600 (Upgrade - Rs 4,900)
Contact: Adobe Systems India
Phone: 0008006501152 (Toll Free)
Fax: 0120 - 2537681
E-mail: sandeepm@adobe.com
Web site: www.asia.adobe.com

Adobe Acrobat Professional 6	B
Performance	► ► ► ► ►
Ease of use	► ► ► ► ►
Value for money	► ► ► ► ►
Features	► ► ► ► ►
OVERALL	► ► ► ► ►

MSI CD-RW CR52-A2
A genuine performer

MSI (Micro Star International) has recently released an internal 52x52x24x—the successor to the DragonWriter 48x16x48x.

It is bundled with Nero burning software, four mounting screws, one 52X CD-R, one 24X CD-RW, an analogue audio cable and an installation guide. The front panel has the standard oval-shaped buttons for play and eject, a headphone output and a volume control. The tray interface is also smooth and fast, and can be placed both horizontally and vertically.

This drive comes with a 2 MB buffer and BURN-Proof technology. The average user won't be able to exploit the writer's maximum speed, as 52X CD-Rs and 24X CD-RWs are difficult to find in India. Other features include Enhanced eXtracting and Adapting Control Technology (EXACT-Rec), which monitors the accuracy of data transfer and Advanced Weighting Suspension System(AHWSS), which reduces vibration and noise.

The drive runs with hardly any noise or errors, and the performance is quite commendable. Although the read speed was a problem for the 52X medium, it was not a problem for other media at speeds below 52X. It offers good stability and performance for those who need quick burning speeds, especially if you are raring to take advantage of the CD-Rs that support 790 MB of storage, which translates to 90 minutes of recorded music.

SPECIFICATIONS

52X write, 24X re-write, 52X read speeds, IDE interface, 2 MB buffer, Exact-Rec and AWSS technology, BURN-proof, supports up to 790 MB disc capacity, horizontal and vertical mounting

Price: Rs 4,100
Contact: Cyberstar Infocom Limited
Phone: 080-2276986
Fax: 080-2236781
E-mail: narend@cyberstarin.net
Website: www.msicomputer.com

MSI CD-RW CR52-A2	B+
Performance	▶ ▶ ▶ ▶ ▶
Build Quality	▶ ▶ ▶ ▶ ▶
Value for money	▶ ▶ ▶ ▶ ▶
Features	▶ ▶ ▶ ▶ ▶
OVERALL	▶ ▶ ▶ ▶ ▶

Apacer Audio Steno
The next step in portable audio players

The Apacer Audio Steno MP3 player functions as both, a voice recorder and a portable USB flash drive. It has a capacity of 128 MB, but there is no provision for expansion.

It is an attractive combination of silver and blue colours—an USB extension cable and an new look ear-phone attached to a sling are bundled along.

The player menu is well-structured, and allows easy access to all features. The player also offers preset equalizer settings such as Rock, Pop, Classical, etc. It can store around 125 minutes of listening time. The player LCD screen also changes to an equalizer band during music playback.

As a voice recorder, the micro-phone is quite powerful, and can record for a maximum of 10 hours. When used as an external drive, the copying, writing and reading data of 128 MB took less than 150 seconds—this is as quick as any USB flash drive of the same capacity.

A major setback is the fact that memory expansion is not possible. Although 64 MB players are available, they are cheaper only by

Price: Rs 7,900
Contact: Xserve India
Phone: 080-5572601
Fax: 080-5572603
E-mail: info@xserves.com
Web site: www.apacer.com

Rs 1,000, making this product a better bargain.

SPECIFICATIONS

USB 1.1, 128 MB Flash memory, five equalizer modes, five repeat options, Digital voice recording in Microsoft ADPCM format at 4 bit 8 KHz mono (4 Kbps), LCD display, one AAA battery, MP3 and WMA format supported

Apacer Audio Steno	A-
Performance	▶ ▶ ▶ ▶ ▶
Build Quality	▶ ▶ ▶ ▶ ▶
Value for money	▶ ▶ ▶ ▶ ▶
Features	▶ ▶ ▶ ▶ ▶
OVERALL	▶ ▶ ▶ ▶ ▶

CD Architect 5.0
DJ kid gloves

Sonic Foundry has released CD Architect 5.0 that supports the Red Book specification (CD-DA compliant) and allows PQ coding; independently setting your own track IDs.

The single-user license does not have any restriction on the number of installations; the catch being that it should never be run concurrently on more than one machine.

One of the things going for CD Architect 5.0 is that it lets you import songs stored in multiple file formats into your project directly, thereby saving you the trouble of converting everything into a single format.

On the flipside, the program installs an MPEG-2 Directshow decoder that works fine with Windows Media Player, but might cause problems with some other applications.

Another disappointment is the lack of support for audio editing. Although there are menus for audio editing, you need to specify an external audio editor to get going.

While burning your track onto the disc, it calculates all the special effects and crossfades in real time. This could be a problem for slower computers.

This program performs decently, but its high price might make buyers think twice.

Price: Rs. 9,950, local taxes extra
Contact: Pro-Music Inc
Phone: 044-28193607
Fax: 044-28193823
E-mail: promusic@vsnl.com
Web site: www.sonicfoundry.com

SPECIFICATIONS

400 MHz CPU, 128 MB RAM, 40 MB free disk space, CD-Recordable drive, 24-bit colour display, Windows compatible sound card, Windows 98 SE, 2000,Me,XP, DirectX Media 8.0 Run Time.

CD Architect 5.0	B+
Performance	▶ ▶ ▶ ▶ ▶
Ease of Use	▶ ▶ ▶ ▶ ▶
Value for money	▶ ▶ ▶ ▶ ▶
Features	▶ ▶ ▶ ▶ ▶
OVERALL	▶ ▶ ▶ ▶ ▶

Philips Xenium 9@9++
Executive Decision

The new Xenium 9@9++ sports an internal antenna and a classic look ideal for the business class. The buttons are well placed, the scroll pad is relatively easy to use and the icon based navigation is also a pleasure to work with. You can adjust the brightness and contrast, and time of the backlight. Such features are not usually seen in phones targeted at this category. However, with certain options such as the calendar or browsing, it feels a bit tedious as you have to navigate through various submenus.

Philips provides users with 254 KB of memory, and also claims to accommodate 500 names and 100 messages. One extremely nice feature is that messages start to scroll automatically once you've opened them. On the flip side though, it can hold only around 18 messages in the Inbox.

It supports EMS so that you can send pictures messages across, if your network supports it. For those who would like to categorise their contacts,

this phone allows you to set 10 groups with distinct ring tones to help you recognise the calling party.

A calendar is provided that gives you a daily, weekly and monthly view. You also have the facility of checking your POP3 e-mail account, and some extra features such as an Alarm Clock, Handsfree mode, a calculator etc.

Overall, an extremely feature-rich phone with looks that will appeal to most businessmen and executives, considering its reasonable price point.

Price: Rs 9,995
Contact: Philips India Ltd
Phone: 011-23738616
E-mail: anishya.oberoi@philips.com
Web site: www.philips.co.in

SPECIFICATIONS

GSM 900 or GSM 1800, 108 x 44 x 20 mm, 82 cc, 101 x 80 pixels, white back light, picture phonebook, EMS 4.0, Polyphonic ring tones, built-in hands-free, WAP 1.21, e-mail client with picture attachments, T9, voice dial, voice memo, organiser, calculator

Philips Xenium 9@9++	B+
Performance	▶ ▶ ▶ ▶ ▶
Build Quality	▶ ▶ ▶ ▶ ▶
Value for money	▶ ▶ ▶ ▶ ▶
Features	▶ ▶ ▶ ▶ ▶
OVERALL	▶ ▶ ▶ ▶ ▶

Ulead VideoStudio 7
Movie making for everyone

Ulead VideoStudio 7 is a video-editing tool with an abundance of transition, overlay, music and video effects, targetted at the home user. The interface is not very intuitive, and getting started is definitely not a cakewalk. But all this can be overcome once you go through the tutorials found on the CD.

The tutorials come in the format of movie files. The CD also carries sample movies, soundtracks and images that can add spice to your home movies. The tutorials are divided into nine parts, each part giving details about various aspects of VideoStudio 7 needed to create your movies.

The Ulead 3D Cool program that comes along with VideoStudio 7 is very helpful for creating

3D animated text effects that can later be imported into your videos. However, you'll rarely find yourself using this utility, since a huge library of animated titles and graphics is provided within the software itself.

While VideoStudio 7 serves the same purpose as DVD MovieFactory (priced at Rs 2,800), the difference is that the resulting movie is much more stylish, with elegant backgrounds, titles, animations, narrations and background music tracks.

Overall, the Ulead VideoStudio 7 is an excellent tool for a beginner wanting to make those truly professional movies.

Price: Rs 6,600
Contact: Micrographics
Phone: 011-22092423
E-mail: micrographics@vsnl.com
Web site: www.asiapac.ulead.com

SPECIFICATIONS

System Requirements: 800 MHz CPU, 128 MB RAM, 500 MB free disk space, display card with at least 1,024 x 768 resolution, Windows compatible sound card, Windows 98SE, 2000, Me, XP

Ulead VideoStudio 7	A-
Performance	▶ ▶ ▶ ▶ ▶
Ease of use	▶ ▶ ▶ ▶ ▶
Value for money	▶ ▶ ▶ ▶ ▶
Features	▶ ▶ ▶ ▶ ▶
OVERALL	▶ ▶ ▶ ▶ ▶

e-Monitor and e-Monitor Pro
Keeping a check

e-Monitor and e-Monitor Pro are two PC monitoring software—the e-Monitor only e-mails its reports to the administrator, while the e-Monitor Pro provides an interface whereby system administrators can monitor a user's computer in real-time.

Both the products use the same method to capture system information, such as the running applications, Web sites visited, files or folder accessed, chat sessions, and even details such as the number of prints, location of prints and the file being printed.

This product is very simple to operate, with a standard way of selecting and generating reports. After using your user name and password (pro-

vided by AccessOnline), to log into the machine, you will get a screen where you can choose the kind of report you want to view.

Both these products do not offer any extra features that would be available with their better priced rivals. The e-monitor meant for single-users is a more valuable buy at a competitive price.

Price:
e-Monitor : Rs 1,950 (single user)
e-Monitor Pro: Rs 13,300 (five users)
Contact: Access Online Pvt Ltd
Phone: 022-25907541
Fax: 022-25684405
E-mail: info@accessonline.com
Web site: www.accessonline.co.in

SPECIFICATIONS

System Requirements: Windows 95, Me or XP, Pentium 100 MHz, 16 MB RAM

e-Monitor	B+
Performance	▶ ▶ ▶ ▶ ▶
Ease of use	▶ ▶ ▶ ▶ ▶
Value for money	▶ ▶ ▶ ▶ ▶
Features	▶ ▶ ▶ ▶ ▶
OVERALL	▶ ▶ ▶ ▶ ▶

e-monitor Pro	B+
Performance	▶ ▶ ▶ ▶ ▶
Ease of use	▶ ▶ ▶ ▶ ▶
Value for money	▶ ▶ ▶ ▶ ▶
Features	▶ ▶ ▶ ▶ ▶
OVERALL	▶ ▶ ▶ ▶ ▶

When the going gets hot, Agent 001 gets going

Agent 001 goes in search of ways to beat the heat

The phone rings, my mother screams, "*beta, phone!*". Who can it be calling at this unholy hour (noon), when I'm on my vacation—I took a week off to play the latest game releases. It's that guy I met a few weeks ago—the guy I talked into buying an AMD. "*Kya AMD Shay-em-dee*, this computer is *bekaar yaar*. I barely use it for *adha-ghanta* and it starts hanging", he screams. Grabbing my umbrella and putting on my rubber chappals, I dash off to his place wondering, "How dare he think I gave him (Gasp!) bad advice. Agent 001 is *never* wrong!"

As soon as I entered his room, I realised what the problem was. My friend took his stinginess a little too far. As if he didn't save enough money by taking my advice, he decided to be penny wise and pound foolish, and installed his AMD in a baby AT cabinet. The way he set it up, he could bake a cake in there. Now, he was faced with the choice of owning a 1.6 GHz frying pan, or spending (ouch!) on some cooling solutions.

We set out on our quest, and soon found ourselves in the dragons lair, the infamous Lamington Road). The first vendor we came across blamed the problem on the AMD box pack. According to him the fans that are shipped with the CPUs are too small, and he offered me a bigger one, from some unheard-of company, for Rs 250. Respectfully declining, we made our way to the next piranha pond. Surprisingly he was well-informed. Between paan-spitting and whooping-cough breaks, he told us that cooling was an often overlooked and under-rated aspect of computing, buying bigger fans is just not enough.

He explained, in great detail, about how a cabinet should have good ventilation, and about the different types of heat sink-fan combinations available. Apparently, the cheaper ones are made of an aluminium alloy and have fan speeds of 4,000 rpm. Another type of combination is made up of copper embedded in aluminium, and costs around Rs 350 for normal brands, and Rs 750 for reputed brands such as Cooler master and Thermaltake. Even the rare Thermaltake series called Volcano are available, starting at Rs 800, although you might have to place an order and wait a few days for delivery.

The third type are entirely copper that offer the best heat conduction and therefore the best cooling. They are a little more expensive, starting at Rs 1,000, but are well worth the price. We also learnt that the fan's speed, measured in rotations per minute, plays an important role—the cooling power is directly proportional to fan speeds. We were truly convinced, and even my parsimonious friend was willing to part with the dough for the good of his AMD. Unfortunately, the vendor was fresh out of stock.

A little dejected but armed with knowledge, we proceeded on our quest. We decided to try suburban areas such as Bandra and Andheri, and found that everyone was offering the Cooler Master, Thermaltake and ADDA combination, albeit at higher prices (Rs 50 to Rs 100 more than Lamington Road prices). We actually found a dealer selling a liquid cooling solution, but at a price that nearly gave my

ILLUSTRATION: Mahesh Benkar

friend a cardiac infarct— Rs 5,000 and above. We also learnt of the '38 degree cabinet'—it's like a normal cabinet with a blower hole cut into the side panelling, just above where the CPU is placed, for better ventilation.

We finally decided on a Thermaltake Volcano 7 series fan with a copper base for Rs 650. Most people can make do with the box-packed heat sink-fan combinations, for everyday use, but overclockers and power users should use better cooling solutions. Also, we must remember that just a good cooling combo isn't enough to secure top-notch performance, a well ventilated cabinet is a must—as my miserly friend learnt, the hard way.

After installing the fan and heat sink combination for my new best-buddy, I headed home, swelling with the knowledge that I had saved the world from itself, yet again. Dreaming of owning the liquid cooler (I made a mental note to put it down on my Christmas list for Santa), I headed back to my PC to see if I could beat my previous record of a non-stop 17 and a half hours of playing Postal 2. ■

SHOPPING TIP

■ Only buy what you need, most bundled cooling solutions are adequate for day-to-day work

■ Heat sinks are rated according to CPU speeds, so check whether the heat sink supports your CPU

■ Before buying a bigger heat sink, make sure it will fit in your cabinet

■ Big heat sink-fan combinations are heavy, thus they require additional retention mechanisms, such as screw's. Check to see if your motherboard has the required pre-drilled holes near the CPU socket

■ Before you buy the heat-sink fan combination, check the under surface for the thermal compound, it is generally covered with a thin plastic sheet.

■ The right type of thermal compound must be used as specified by the CPU manufacturer. Check the type that your processor requires from its manufacturer's Web site

ILLUSTRATION: Mahesh Benkar

What the
Spam!
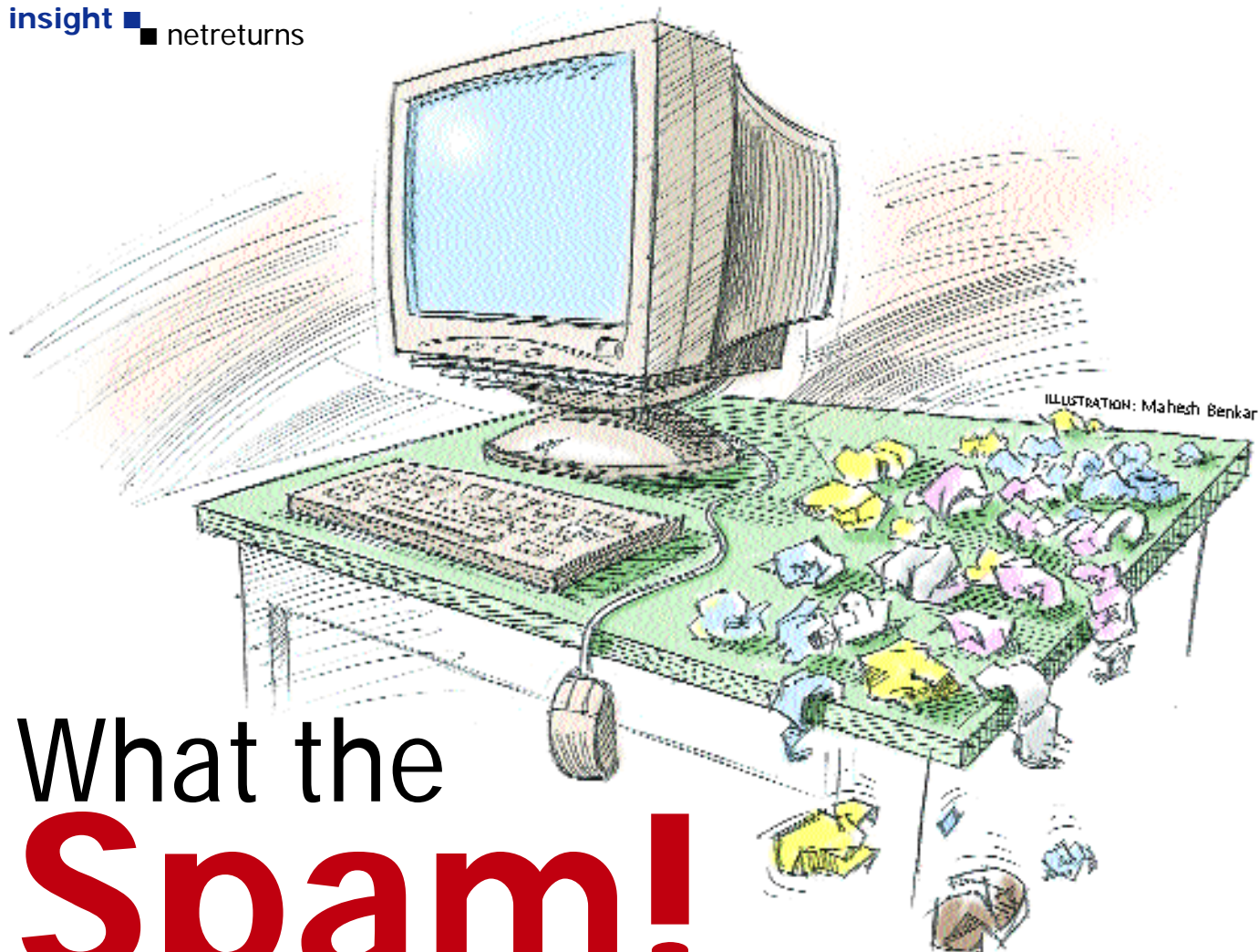
Spam, in all its forms, is not a welcome sight in your mailbox. Here's how you throw the gauntlet back on its face!

Anyone with an e-mail ID, and using it regularly to send and receive e-mails, to authenticate oneself to various service Web sites and subscribe to newsletters related to your areas of interest, receives spam. Whether you choose to do anything about it is a different matter—some just ignore it, some delete it, and others employ software tools to block or filter spam.

What is Spam

Spam, refers to unsolicited commercial, or bulk e-mail that floods the Internet with many copies of the same message, in an attempt to force messages on people who would otherwise choose not to receive it. Be it that superb free phone offer or the ardent plea for money for a charitable cause— these are all classic examples of how spam can draw your attention. Of

course, the usual tricks of newsletters and subscriptions to pornographic Web sites are faithfully employed.

The simplest ways for a spammer to obtain a large number of e-mail addresses is to buy them in bulk from companies, and by using automated scripts called spambots that parse Web pages and newsgroups, and look for strings of characters that resemble e-mail addresses. These spambots harvest whatever e-mail addresses they can find and make them available to the spammer, or even send out e-mails directly. Spammers also use name generation programs to generate e-mail addresses to send bulk e-mail, even though most of these may not be valid. Spammers also procure e-mail addresses from mailing lists and from people themselves, when they reply to spam asking for removal.

Reporting spam

There are a lot of ways to report spam. The Coalition Against Unsolicited Commercial E-mail (CAUCE) is an ad hoc, voluntary organization, created by Netizens to advocate for a legislative solution to the problem of spam. The Indian chapter of CAUCE (*www.india.cauce.org*) is dedicated to nipping the spam problem while it is still a manageable issue before it snowballs into a bigger problem.

The basic step to fight spam is to report it to the spammer's service provider. To find out where the spam came from, you have to use the headers of the e-mail. This is a slightly complicated process. However, you can use *www.spamcop.net*, a Web site that reports spam on your behalf. All you need to do is to register free with the Web site, and SpamCop will send an appropriate e-mail on your behalf to the

Bayesian Spam Filters

Bayesian spam filters calculate the probability of a message being spam, based on its content. Unlike simple content-based filters that categorise e-mail by specific words or phrases, Bayesian spam filters 'learn' from a
specific user's e-mail, and build a list
of characteristics to look out for. The characteristics the filter looks at need
not only be the words in the message body and its headers, but also other aspects such as HTML code, or even word pairs and phrases. These filters tweak themselves and get better with time as the list is built up. As the filters get trained specifically for every user, spammers will have an even harder time working around spam filters. These filters can adapt to almost everything spammers try. Spammers will only make it past
well-trained Bayesian filters if they make their messages look perfectly like an ordinary e-mail. The chance of returning false positives i.e., wrong classification of legitimate e-mail as spam, is minimal.
This results in a more robust and efficient way of spam detection.

The user starts with e-mails that he has classified as spam, and another bunch of legitimate e-mails. The filters look at both, and analyse the legitimate e-mails, as well as the spam, to calculate the probability of various characteristics appearing in spam, and in normal e-mails.

appropriate network administrator. You can also use various other tools such as the Spam IDentifier found at *www.spamid.net* that looks up the owners of an IP address or domain name.

A whole lot of tools that trace and report the spamming culprits are also available at *www.spamabuse.org*.

Remove-Spam (*www.remove-spam.com*) has spam reporting services that offer manual tracking and reporting of your spam on a per-report or monthly fee basis.

If you have Microsoft Outlook, you can also use Spam Control found at *www.hendricom.com/spamcontrol.htm*, which is a reporting tool that forwards spam to a reporting organisation.

SPAM Punisher (*www.spampunisher.com*) is also a useful program that assists with creating complaints about received spam.

Spam Do's and Don'ts

There are a few things that you can do at your end to evade spam. Never make lists of e-mail addresses, and if you do, do not e-mail the list: Many people pass on jokes and other interesting stuff to their list of friends. Some of them pass it on to their own contacts, and the list keeps on increasing. While this may be acceptable to the recipients, it would be the perfect way for a spammer to get a list of valid e-mail IDs of a large number of people at one go. One alternative around this is to send the e-mails separately, so that a single message does not contain many e-mail IDs.

If a spammer receives even one response among the thousands sent out, it is enough. If you reply to a message, the spam will know that your e-mail ID is valid, and continue spamming. In addition, once the spammers know that your e-mail ID is legitimate, they can sell your address to other spammers, kicking off a chain.

An important point to remember is to never respond to the

Installing and Configuring POPFile

There are a few key settings you need to adjust to make POPFile work for you. The process begins from the time you kick-start the installation.

STEP 1 The first significant step in the installation process is to select the program components. You can safely uncheck the Languages box. When it asks you to specify the ports for POP3 and the user interface connections, leave the settings as they are. If your mail client runs in the background all the time, check the box to make POPFile always start with Windows.

STEP 2 A bucket is the equivalent of a folder in an e-mail client. E-mail is sorted into buckets depending on its content, and the rules you teach it. By default, four buckets have already been created. You must have at least two buckets to use POPFile (to sort the good mail from the bad), so you can remove work and personal bucket, if you don't want a detailed classification of your e-mails.

STEP 3 Launch the application, in say Outlook 2002. Go to *Tools > E-mail Accounts*. Choose to modify your existing e-mail account. Now, in the POP3 field, change your server address to localhost. Then modify your username to the following
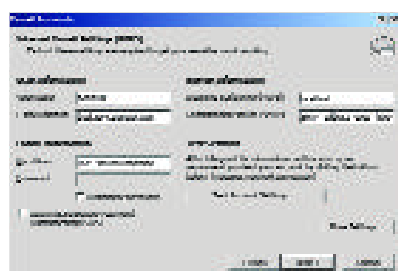
Change settings in the E-mail Accounts dialog box of Outlook 2002

format: *Server_address: username (e.g.: pop.mailserver. com:badjag)* Click on Next to finalise the changes. This causes POPFile to intercept requests for messages from the e-mail client and then connect to the server to download and process them. Remember, POPFile must be active while your mail client is checking for new messages.

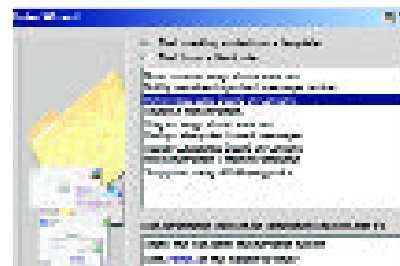**STEP 4** Launch the program in the background by clicking on the appropriate icon in the Start menu. Double-click on the icon in the System Tray to launch the HTML interface. Now click on the Buckets link. Click the Turn On button under the Quarantine column for the spam bucket. This will bypass most of the tricks that the beastly spammers use to check if

The HTML interface for POPFile provides you with the configuration settings

your e-mail address is being actively used, thus making it a perfect target for even more spam. Turning on Quarantine converts the message to a harmless attachment, and fools the spammer into thinking the address isn't active. The Subject Modification column adds the bucket name in the message header for easy filtering in your mail client (e.g. [spam] is inserted in the subject line of messages that POPFile considers useless)

STEP 5 Back in Outlook, click on *Tools > Rules Wizard*. Choose your e-mail account in the drop-down box, and click on New. In the new window that pops up, select 'Move messages based on content'. Then click on the specific word's link. Add the same text that POPFile uses to mark the message (e.g: [spam]) in the new box. Click on the Add button and then click OK. Now it's time to select which folder to move the marked messages to. Click on the specified link. You can either choose a folder from the list (move spam straight to the trash, for example) or create a folder to filter your other kinds of mail (work, personal, psychotic, etc). Click on Finish to cement the changes and get ready to enjoy a—relatively—spam-free life.

Use the Rules Wizard in Outlook to set the rule to be applied to the received e-mail

STEP 6 Here's where the fun part begins. Once POPFile begins intercepting requests for e-mails from the client, it displays messages from the last two days in the History section of the interface. You can change the number of days and the number of messages per page in the Configuration section.

POPFile is a program that learns to differentiate between good and bad e-mails. As a result, it will be highly inaccurate in classifying the first few messages it receives. In fact, it actually leaves the very first batch of e-mails unclassified.

So this is what you've got to do. Look at the e-mail you've got and classify it using the dropdown box in the right-hand side of the window—if you haven't changed any of the default buckets, you can choose from inbox, spam, work, and personal. Starting with the next batch of e-mails you receive, POPFile will automatically try to classify it. If you find that it has classified something wrongly (or not at all), simply head back to the History section and point it in the right direction.

Give it some time and e-mails—the programmers recommend 100 e-mails before it achieves total accuracy, and then watch it filter out all that unwanted junk!

---

spam e-mail's instructions to reply with the word 'remove'. This is just a trick to get you to react to the e-mail. It informs the sender that the e-mail address is valid, which greatly increases its value. If you reply, your address is placed on more lists, and you receive more spam.

Also, avoid listing your e-mail ID on

Web pages, and if you do, make it difficult for spambots to harvest. E-mail IDs listed on Web sites are the main source for spammers. These listings make it easy for spambots to harvest them. However, you can list your e-mail IDs, and still make it difficult for spambots to detect. This can be done by using graphics

instead of text to display the e-mail addresses or by inserting spaces in the e-mail ID.

Web sites that promise to remove your name from spam lists are another sham. These sites are of two kinds: genuine and spammers. The first kind of site is ignored (or exploited), by the spammers, the sec-

Hiding your Secret Message

There are various software tools available that encrypt messages for increased security. However, it is still evident that the particular message has been encrypted and an interceptor may attempt to decipher it. *Spammimic.com* offers an alternative to hide your message inside what would appear to be a harmless spam. Just
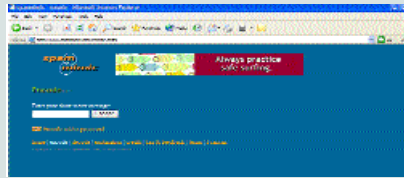
Encoding your message at Spammimic.com

point your browser to the Web site, and click on the 'encode' link. Type the message in the text box provided. Next, click on the Encode button. You will now be shown a long message that will appear like a regular spam message to anybody who sees it. What the intended recipient of your message needs to do is to go to spammimic.com, click on the 'decode' link, paste the message into the text box, and click on the Decode button. Voila! The original message appears. You also have the option of adding a password while encoding a message. The recipient will have to enter the same password to decode, and view the message.

ond is owned by them. In both cases, your address is recorded and valued more highly because you have just identified it as being read by a human.

It helps to check a Web site's privacy policy before subscribing to newsletters: Keep in mind that there is a difference between subscribing to receive mail for a specific purpose and junk mail. If you don't agree with a Web site's privacy policy, don't subscribe for e-mail updates. Remember not all the mail that comes into your box is necessarily spam.

A workaround is to use two e-mail accounts—one for official and personal correspondence, and the other to be used while surfing. This way, you can enlist the other ID for newsletters, and registrations, channeling potential spam to it.

Physical spam

Besides the digital spam we are all familiar with, there exists another form of spam—physical spam. This involves sending printed brochures and catalogues to a list of recipients, through Web sites offering these for free. The recipient has to cull through reams of unrequested fliers, brochures, catalogues and other marketing material to filter the required e-mail. This can also take anti-racial, or anti-religious forms wherein brochures or catalogues that may be objectionable to certain communities, or religions are targeted at specific groups of people. Another variation of physical spam aims to paralyse the normal working of the postal system by targeting a specific geographical area. This causes the post office handling e-mails for that region to be blocked by hundreds of catalogues or mailers.

It is indeed irritating to see spam when checking your e-mail. It's something you'd gladly love to click goodbye forever. Well, that is possible to a certain extent. Spam can be countered successfully only through a combined effort of all Netizens. Every possible instance has to be reported and dealt with. This will ensure that the culprits get detected and pay the price for their uninvited, havoc-wreaking e-mails.

DEEPAK DHINGRA and BADRI NARAYANAN

IMAGING: Solomon Lewis

Down with
(POP)-Ups

**Surf cleaner, and stop wasting precious bandwith on those pesky pop-ups**

"Free porn in your e-mail", shrieks the little window. All you did was visit a personality test site, and up popped this tormenting little window. What's worse, every time you close one, two more appear. Embarrassed, and hoping that no one saw the indecent window, or worse, thought that you were intentionally viewing such material, you close everything and shy away from surfing for a few hours.

The pop-up trend looks set to continue with their continued commercial success. These annoying little windows are pushing everything from holidays to software, to the latest online scam into our faces. For those of you who still don't know what pop-ups are, they are the small windows that open unexpectedly while surfing. This pop-up is not asked for by the user, and can be launched using code within the page we are actually reading. Another variant of this is called the pop-under. Pop-under windows are also launched without any request from the user, but do not come to the foreground; they remain inactive and are seen when the user closes the main window. This is less intrusive but still, quite a nuisance.

Most netizens have learnt to ignore pop-ups—some close the tiny windows as soon as they appear. This works most of the time but with more and more sites adding pop-up and pop-under windows, it would

be easier to have a smart piece of software to do this for you. The reason being that some pop-ups can be quite useful, and the right software will help discern the junk from useful pop-ups. For example, a lot of useful sites like to offer subscription to newsletters or site updates via e-mail. A pop-up, containing a form in which you
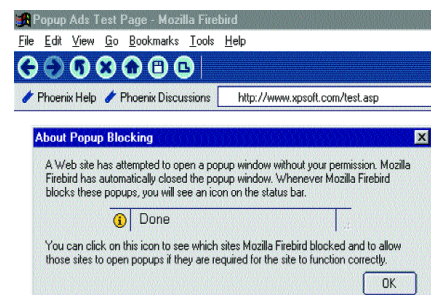
Firebird only warns you the first time it blocks pop-up windows

Find them on the Mindware CD
Mozilla Firebird 0.6
PopUpCop
Pop-Up Stopper Professional
Smart Popup Killer

enter your e-mail address, is increasingly becoming the method of choice for offering these. Sites conducting surveys to improve their consumer service, also ask for participation through pop-ups. Some sites place a cookie on your system so they don't show you the same pop-up again.

Another reason to make the switch

A very simple solution to the pop-up problem is to use a browser with in-built pop-up protection. There is a certain level of pop-up protection in all the new versions of popular browsers such as Opera and Mozilla. Mozilla Firebird, a free browser, is very easy to use because it functions a lot like Internet Explorer. It blocks pop-ups silently—only giving a warning the first time they're blocked—with an exclamation mark in the status bar indicating that a pop-up is blocked.

When pop-ups are blocked the notification is easy to see. It also tells you how to temporarily disable blocking

Firebird works quite effectively and is sufficient for most users who don't want the hassles of configuring other software. To enable, or disable pop-up blocking, go to *Tools > Options* and select Web Features from the left pane. There will be a 'Block Popup Windows' checkbox on the right. Below the check box, you can enter the URLs of the sites you do not want pop-ups blocked from. This is commonly called a safe list, and is an easy way to let the software know from which trusted sites you do not want pop-ups blocked. There are no other advanced controls and settings, but most pop-ups are taken care of quite effectively at this stage. For greater protection, you'll need a dedicated utility.

PopUp Stopper Professional is a comprehensive pop-up blocker that works with most browsers. It blocks pop-ups that got past Firebird's defences. The program has some great features. It plays a sound, brings up an indicator over the system tray and changes the mouse cursor to a bright red blocked signal when a pop-up is blocked—so you just can't miss it. Other privacy features include clean-

Pop-Ups put to Good Use

Marketers put pop-ups to several uses. Newsletter and e-mail list subscriptions can be solicited using pop-ups across all the pages of your Web site. A cookie would ensure that the user sees the pop-up only once, no matter which page of your site he visits first. Pop-ups informing users of special discounts, or offers on the items that they are currently reading about would be welcomed. Polls and quick questions get a good response when offered through pop-ups. The key here is keeping the user interested by presenting it in the right way and asking the right questions to get the info you need to improve his experience. The more you know about your customers, the better you can mould your site or business to their needs and maximise revenue. A pop-up when the user leaves your site—called an Exit Pop-up—can be used to obtain the user's e-mail address, thank them for visiting the Web site, or offer to add your Web site to their Favorites list so they can easily find their way back. One of the coolest uses of pop-ups is to offer direct help for the meaning of certain words on the page. Clicking the word shows a pop-up with a short meaning and a link to the related info.

Marketers can effectively use pop-ups by observing some simple guidelines and keeping in mind two simple things—relevance and usability. If the contents of the pop-up are useless, no amount of glitter and sparkle will make a surfer interested. So content creators must understand the type of user visiting their site, and create content relevant to them.
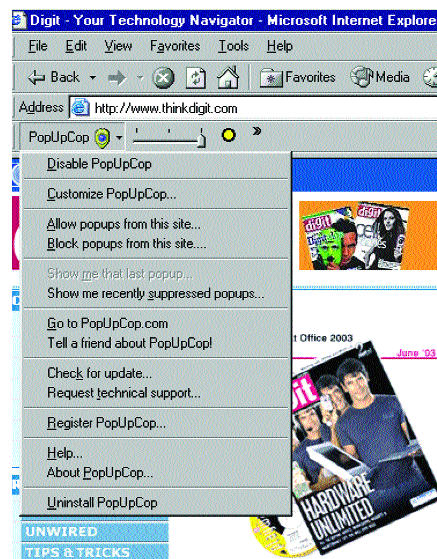
Designers can increase usability by keeping the design simple and easy to navigate. Smaller HTML code and smaller size of graphics will reduce loading time, which greatly increases the chances of your message being seen. Having more than one pop-up open at the same time is a definite no-no. That defeats the purpose of attracting attention to an important message, and ensures your visitor will lose interest quickly.
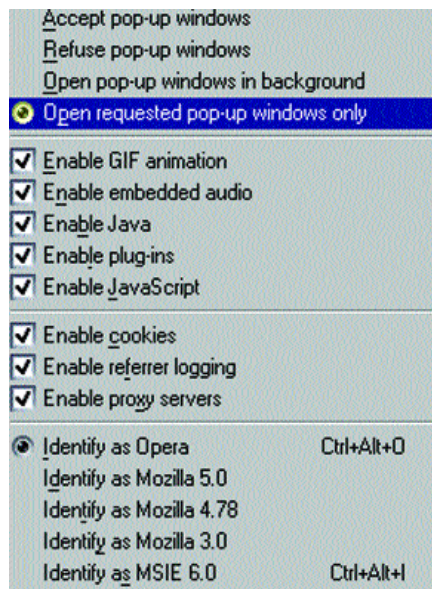
Opera's Quick Preferences allow you to quickly adjust settings including pop-up blocking and filtering of other content

PopUpCop's main menu button gives access to most of the program's basic options

ing of your browser's cache, erasing browser and Windows histories, even emptying your recycle bin and clearing the Windows clipboard. If you need the extra protection, go ahead and install it.

Opera affords a little more control to deal with pop-ups. It also offers effective blocking built right into the browser. To turn on pop-up blocking, simply press

[F12] to bring up the quick preferences menu; here, you will find four options—accept pop-ups, Refuse pop-ups, Open pop-up windows in the background and Open only requested pop-up windows.

The last option—open only requested pop-ups—works best most of the time. As always, through trial and error, you should look to find your own balance between cleaner surfing and the possibility of useful pop-ups being blocked.
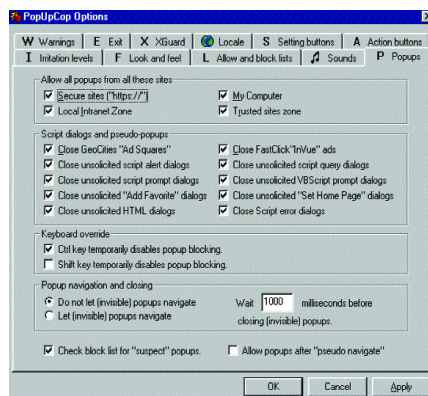
The flyout menu gives easy access to all the settings

PopUpCop's provides advanced options for how different types of pop-ups are dealt with

Quick Fix

Smart Popup killer is a very simple program without many options but is very effective at controlling pop-ups. After installation, it remains invisible until the Explorer is run. When launched, a small B in the taskbar shows that blocking is functional. Left-clicking will allow pop-ups and show as an A in the taskbar. If you think the filtration is too lenient or too harsh, change the level by right-clicking the tray icon and selecting from the menu that comes up. Smart Popup Killer also sports an allow list and a cookie manager.

For the rest of us

For those who would like to continue using Internet Explorer, you need to install a third party pop-up blocker, such as PopUpCop. After installation, the software will add a toolbar to IE—if you do not see the toolbar within IE, from the top menu select *View > Toolbars > PopUpCop.*

The toolbar is very simple and easy to understand. There is a main button that is labelled PopUpCop, which shows a menu giving you the main program options. From here, you can set detailed options for all the program's aspects. The level of filtering can be easily set to one of the presets using a simple slider on the toolbar itself. The toolbar also has an indicator light that glows green if the page is free from pop-

*see offer on page 94-95

ups, red if annoyances have been blocked on the page and yellow if there are annoyances present but not been blocked. There's a small double arrow (>>), which opens a fly-out menu with on, off, or partial filtering for all other annoyances that the program can block. This can be effectively used in conjunction with the indicator light. For example, you visit a site that you find interesting, but see that the indicator turns red. Clicking the indicator shows what's been blocked. You can simply disable blocking for those things and refresh the page to see what you missed.

The 'annoyances' PopUpCop will protect you from are numerous—images, background sounds, flash animations, scripts, browser re-sizing, and a host of other things can be enabled and disabled directly from the toolbar's fly-out menu. Use the program's detailed cookie manager to take charge of personal information contained in cookies. There is also a shortcut to the Favorites folder in Windows, a button to clear the browser's cache and an allow list for your trusted sites.

A good usability feature is the ability to add the site being currently visited to your Allow list, with just a couple of clicks from the toolbar. These sites get added to your safe list and the settings are remembered the next time you visit them. PopUpCop asks before blocking pop-ups, so you know when they are present and don't find out after they've been blocked. PopUpCop also has an auto-installer manager. This helps manage security when installing software from the Web using IE's auto install feature.

Using all this stopping power, you can enjoy a safe and embarrassment free surfing experience, and never worry about unwanted pop-ups again.

KAIZAD VAJIFDAR

The Pop-Up Mafia

Pop-ups and pop-unders are usually advertisements, which most surfers don't care to see. Online advertising is accounted and paid for in one of two ways—the advertiser pays per click that leads to his site (click-through) or per time the ad is displayed (impression). The in-your-face manner of pop-ups makes the response in terms of click-throughs up to five times that of standard online advertising such as banners and buttons. Web sites can charge higher rates per impression of a pop-up as compared to a banner since the display is more prominent, and can-

not be missed by the surfer. This high return tempts Web sites to over-use the technique in a bid to increase their revenues. All this makes it pretty clear that pop-up advertising is here to stay. Besides the fact that pop-ups are just plain irritating and we don't want to see them, they also take up precious bandwidth, something some can scarcely afford. Web developers also have other annoying things like pages that automatically add themselves to your Favorites list or set themselves as your home page without your consent.

30Minutes Expert
Virtual Desktops in Windows

With today's powerful computers and changing work scenario, you work with various applications simultaneously. This clutters the taskbar with many buttons and you end up wasting time switching between applications.

One easy solution to manage this clutter is using multiple desktops, or work-spaces. Though Windows has only one desktop, there are certain utilities, called Virtual Desktop Managers that allow you to create multiple virtual desktops, thus allowing you to organise your work.

One such popular and powerful utility is Cool Desk. The latest version, 3.87, can be found on the Mindware CD, or can be downloaded from *http://www.shell-toys.com/virtual_desktop*. The Setup Wizard is simple with clear installation instructions—after it is complete, you are immediately taken to Settings Wizard. You can choose to create up to 9 virtual desktops. You can also choose to show functions such as, 'Minimize All', 'Rotate', 'Close', etc.

In the next step, you can choose to

Other Options

Desks At Will
This software from Idyle Software has many features that are exclusive to it, like placing pop ups in separate virtual desktops and placing specific applications in specific virtual desktops every time that application starts. You can create up to 10 virtual desktops in the Trial version.
http://www.idyle.com/software/utilities/desks-at-will/

Perfect Screens
This utility allows you to have unlimited number of virtual screens. Some of the features of this utility, are application buttons specific to given virtual screen, screen exclusive windows and password protection. The interface is rich with buttons but it may take a while to understand it.
http://www.softwareutilities.com/psindex.htm

have a separate wallpaper for each virtual desktop. You can also make your icon text background transparent in Windows 98, or ME. To do this, check the box 'Enable transparent background for icon text'.

You can activate this wizard whenever you need it by going to *Start > Programs > Cool Desk > Settings Wizard.*
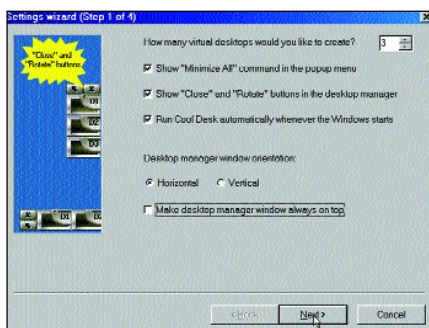
You can choose the level of customisation for your virtual desktops

Once you have completed the Settings Wizard, you will see the icons for the various desktops, on the desktop area and the Quick Launch toolbar. To jump to any virtual desktop, just click on its icon on the Quick Launch toolbar, or double-click the icon on the Windows desktop. You can also click on the Desktop Manager icon placed on the top-right corner of your screen. If you cannot see this, right-click on the Cool Desk icon in the System Tray and check Windows Manager. You can also use your scroll mouse to rotate between the various windows. You can configure this feature under Mouse tab in Settings.

Window Manager shows you the list of running programs on the active virtual desktop, as a drop-down list. When you want to see a comprehensive list move your mouse over the desktop icon on the
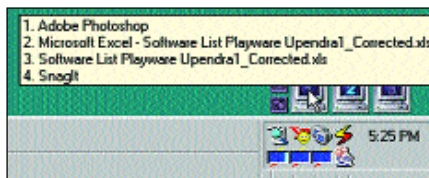
Desktop Manager gives you a list of programs running on each virtual desktop
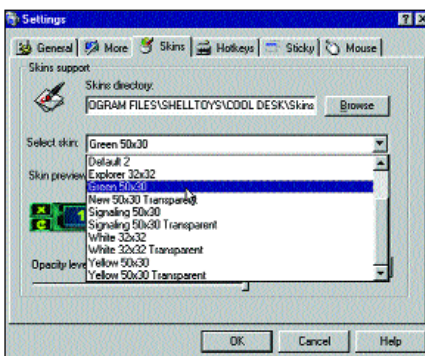

Cool Desk 3.87
Find it on the Mindware CD

Desktop Manager. This will show you the list of applications running on that virtual desktop as a tool tip.

Cool Desk offers you many options to customise it to your liking. For this, right-click on the Cool Desk icon, and go to *Settings > General.* Here, you will see all the options you saw in Settings Wizard. Under the More tab, you will find options

Give your Cool Desk the look you want

to enable own desktop icons, wallpaper and transparent background.

The default skin is Windows XP, but you can change it to one you like by going to the Skins tab in the Settings dialog box. Select the skin, see the preview and click OK to change the skin. You can download more skins from *http://www.shelltoys.com/virtual_desktops/skins.html.* If you are using Windows XP, you can also set the transparency level of the skin here.

Under the Hotkeys tab, you can assign shortcut key combinations for navigation. The default is *[Ctrl] + [Shift] + [desktop number]*. If you want certain applications to be shown on all the virtual desktops, you can list them out under the Sticky tab.

You can use other applications too(*see box 'Other Options'*), some are light and consume less memory, some are free and others have more features. **d**

UPENDRA SINGHAI

Using master slides
in PowerPoint, you
can increase your
efficiency and speed
of work

Microsoft PowerPoint is the most widely used presentation software by both professionals and students. The main problem faced while creating presentations is maintaining the overall consistency and appeal. Formatting each slide requires too much time and effort, especially when a change has to be made which is presentation-wide—such as changing fonts or adding an image to the background. These problems can be easily overcome by using a very powerful feature of PowerPoint, master slides.

Master slides save time and make it easier for you to achieve consistency in your presentations. They are special slides that define the formatting of the remaining slides in a presentation. For example, if you want a specific formatting style or picture—such as your company logo—to be the background picture for all slides, you can use master slides to achieve this. A master slide also contains placeholders for footers, so whenever you want to insert a footnote in

The default .ppt format is good when you are designing presentations, but when you are distributing presentations, it is better to save in the PowerPoint Show (.pps) format, as these files can only be viewed as slide shows but cannot be edited. To save a file in PowerPoint Show format, click *File > Save As* and choose PowerPoint Show (*.pps), and click OK.

your slide show, you can just put it on the master slide. Similarly, if you change the formatting of the text in master slide, all the slides of your presentation will reflect that change.

There are also masters to control various other components of a presentation, such as the Title Master, Handout Master and Notes Master. The Title master defines the look of slides that use the title slide layout. The Handout master guides the look of the handouts that you print, and the Notes master changes the way the printed notes look.

Using an image as background
You can create a customised background for your presentation using images such as a picture, or a wallpaper of your choice. This will bring about individuality and
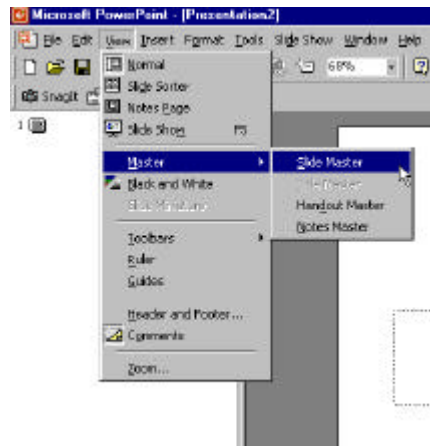
Switch to Slide Master view to edit the Slide Master
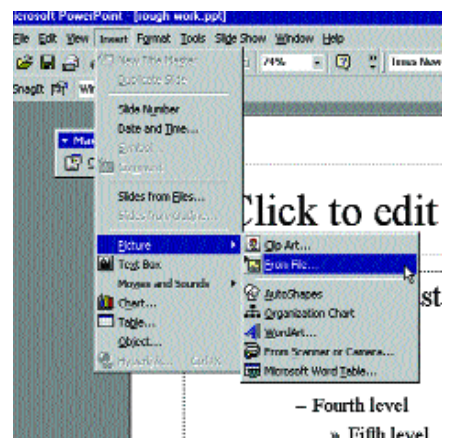
Any image can be used as background for your slides, such as your company logo

consistency to your presentation. To do this, you will need to switch views to Master View. Go to *View > Master > Slide Master*. In order to insert an image as a slide's background, go to *Insert > Image > From File*. Choose the file you want to use as the background and click OK. You may have to resize the image and send it to the back by right-clicking on the image and choosing *Order > Send to back*. You can also do this before switching to Master View, by right-clicking on a slide and choosing Background. From the drop down list choose 'Fill Effects...'. Now, click on the Picture tab and click on Select Picture, choose the picture you want as your background, click Insert, then click OK and finally click on 'Apply to All'.

Master slides are also useful for placing logos and items that are not necessar-

If the inserted image is not visible, bring it to the front by sending the image on top of it to the back

ily background images. For example, if you want to place your company logo on the top left of all slides, using the master slide is the easiest and fastest way to go about it.

Giving your text a consistent look

You can use master slides to specify a par-

Change the font colour to match the background

ticular colour or font for text on all slides. To change how the title text of each slide looks, simply select the text 'Click to edit Master title style', 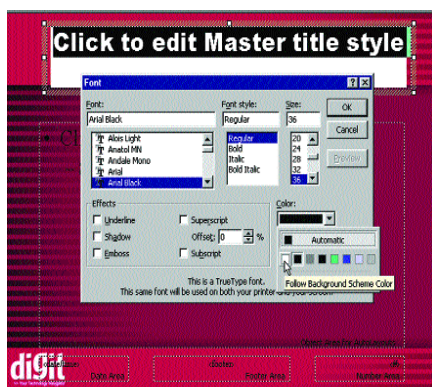and go to *Format > Font* to bring up the font dialog box. Now, whatever formatting you choose here will be applied to the title of all the slides in your presentation.

Manipulating text

If you want to add things to the footer of the slide show, such as the slide number,
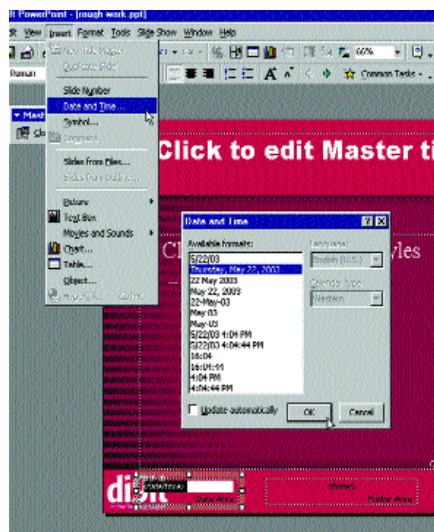
Insert the date and time in your slide; it will be automatically updated

the date, time and the author of the slide, you can use a master slide to create it. To insert the date and time into your slide, select the '<date/time>' area at the bottom left of the master slide, and click
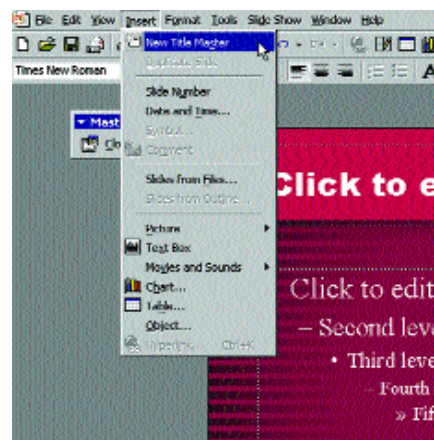
Give a different look to title slides by using Title Master

Insert > Date and Time. You will be presented with a dialog box where you can decide the date and time format that goes into your slides. This also has the 'Update Automatically' option that will update the date and time every time you re-open the presentation. Note that will only apply to a presentation saved in the .ppt format.

To make text appear on every slide in a fixed position, select the Text Box tool, place the text box on the master slide, and type in the required text. The same text will appear on every slide at the same position.

Using Title Master

A new slide can use one of the many pre-defined layouts—the Title Slide layout, the Title layout, etc. The Title Master is handy when you want you title slides to

---

In PowerPoint 2002 you can use multiple master slides in a single presentation, but PowerPoint 2000 has only one Slide Master per file. This means that either all slides in your presentation look the same, or you spend too much time on their customisation. You can reduce the amount of customisations by creating simulated master slides. To do this, create a separate slide for each layout you want to repeat.

To create a new slide, based on one of these 'masters', switch to the Slide Sorter view and select the 'master' slide you want to use. Duplicate that slide from the Edit menu, and customise the duplicate to include the text and graphics for that slide. This way you can have more than one Master slide.

Sites to visit

http://infocomp.csuchico.edu/metis/app/powerpt/powerpt_index.htm
Here you'll find a comprehensive tutorial on PowerPoint. The best part of this tutorial is that it has lots of screenshots and makes learning very easy.

www.uwec.edu/help/ppointXP.htm
This is the official Web site of University of Wisconsin-Eau Claire, and you can find tutorials on PowerPoint XP as well as 2000. The tutorial covers basic as well as advanced topics, such as charting, linking and branching etc.

http://www.microsoft.com/education/ ?ID=O2kTutorial

Here, you can download a 712 KB, 24 Page tutorial on PowerPoint which covers the basics of PowerPoint and also topics such as adding graphics, animation and sound to PowerPoint presentations.

http://www.bitbetter.com/powertips.htm
This site has a good collection of tips on PowerPoint. Apart from this, it has an FAQ section on PowerPoint and a PowerPoint User Forum. You can also download a few presentations about PowerPoint.

http://cel.colgate.edu/howto/powerpoint/mac/
If you are a Mac user, there are tutorials for PowerPoint on Mac available at this site.
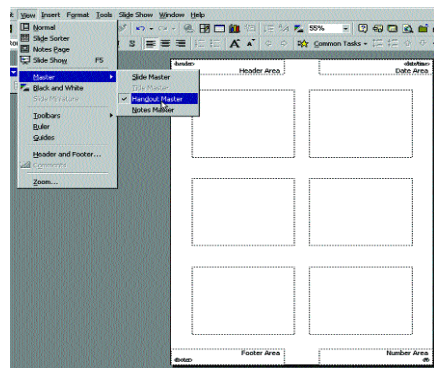
Decide the way your handouts are printed

Keyboard Shortcuts

While the presentation is running, press *[Shift] + [?]* or *[F1]* to get a dialog box listing the shortcut keys. These are:

Next slide	[N], [Enter], [Page Down], [→], [↓], [Spacebar], or click the mouse
Previous slide	[P], [Page Up], [←], [↑], or [Backspace]
End a slide show	[Esc], [Ctrl] + [Break], or [Hyphen]
Stop or restart an automatic slide show	[S] or [+]
Particular slide	[<number>] + [Enter]
Next hidden slide	[H]
Display a black screen, or return to the slide show	[B] or [.]
Display a white screen, or return to the slide show	[W] or [,]
Hide the pointer	[Ctrl] + [H]
Redisplay hidden pointer and/or change the pointer to an arrow	[Ctrl] + [A]
Return to the first slide	[1] + [Enter]

look different from the rest of the slides in your presentation. It affects only those slides that use the Title Slide layout. To edit the Title Master, switch to Master Slide view and navigate to *Insert > New Title Master*. All changes, such as background, text formatting, text positioning, etc., that you make on the Title Master will be reflected only on Title Slides. This is especially helpful when you want to make your audience aware that a new topic is going to begin.

Using Handout and Notes Masters

Handouts can have two to nine slides printed on each page. Notes have one slide printed on each page along with notes you wrote for the slide. Notes can be entered at the time of slide designing in the Notes Pane, which is located just below the slide. Objects can also be inserted into notes. This can be done only by switching to the Notes view by clicking *View > Notes Page*.

Click *View > Master > Notes Master*, to change any items within your note. You can resize or change the location of the slide image or notes box to suit your needs. You can even add art, text, headers or footers, date and time, or page number. Remember, these items will appear when you print them. You can

view your notes using the *View > Notes page*. These items will not appear in the Notes Pane. To print Handouts or Notes, go to *File > Print*. In the 'Print What' option, choose Notes to print notes and Handouts to print handouts, and click OK to print.

Overriding masters

There are times when you would not

You can change the background or hide your logo on any specific slide.

want certain slides to follow the Slide Master settings for every detail. For example, a slide with only one large graph might require that the logo be invisible. In such cases, changes can be made to individual slides and these can then be applied to that particular slide only.

To give a slide a background different from the master's, display the slide

TIP
Normally, when you use *Edit > Select All* (or *[Ctrl] + [A]*) and copy the slide by using *Edit > Copy* (or *[Ctrl] + [C]*), the background is not copied. If you want to copy all the content from the master as well, switch to Slide Sorter view by clicking *View > Slide Sorter*, select the slide that you wish to copy to the Clipboard and then press *[Ctrl] + [C]*. Now everything visible on the slide is copied to the clipboard.

TIP
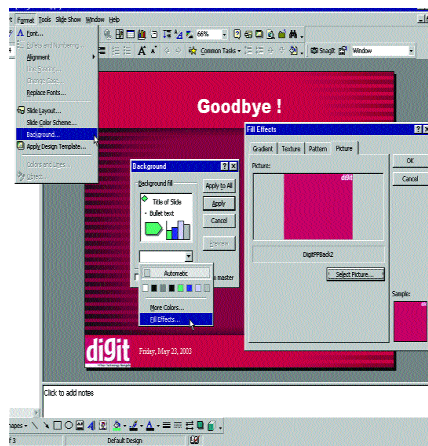Readability and keeping audience interest are the two main issues that you should consider while designing a presentation. Don't compromise on readability to make the presentation interesting. It's a good idea to use light background and dark text, if you are making presentations for an Overhead Projector, and to use dark background and light text if the presentations are to be shown on an LCD Projector. Also, if you are using your company logo or a background image, make sure that the colour scheme you choose gels with the colours of background images.

you want to change and go to *Format > Background*. Click on the drop down list, choose Fill Effects and choose the options as per your requirements, click on OK, and then click on Apply. Remember that clicking on 'Apply All' will affect all the slides in your presentation. If you want to hide the master background for a particular slide, check the 'Omit background from Master' checkbox in the above dialog.

To apply a different colour scheme to your slide, select 'Slide Color Scheme' from the Format menu, and then click the Standard tab. Choose the colour scheme you want and then click on Apply.

Now that you have learnt to use master slides in PowerPoint, you can create professional presentations that are aesthetically appealing and convey the message you intended. ◘

UPENDRA SINGHAI

Install and uninstall software in a jiffy

Installing programs on Linux can be really difficult, especially if you are accustomed to the Windows way. Unlike Windows, Linux doesn't have wizards that automate the task—you have to use some command-line utility. At most, you will be provided with a graphical front-end to the command. Moreover, each Linux distribution follows a different package format, such as tar, rpm, deb, etc. In spite of all these apparent setbacks, you will be surprised to find people swearing by Linux package installers. The reason for this being that they do a very clean job—no registry settings to be tweaked.

In this workshop, we will cover the basic rpm command-line tool, a graphical utility Gnome-RPM, the default package managers of Red Hat and SuSE, and finally, a common package manager for both distributions—Nautilus.

Red Hat Package Manager

Red Hat Package Manager is a powerful command-line package management system tool, which is developed by Red Hat. With the help of this tool you can query, install, verify, upgrade, as well as uninstall packages. The files have an .rpm extension, and the filenames follow a standard format of 'package-version-build.architecture. rpm'. An increasing number of distributors are using the rpm format for their programs, as they are easier to install than the other two methods—source code or pre-compiled binaries.

Querying

The first step, called Querying, involves checking whether the package is already installed or not. To check this, you need to execute the rpm command with the -q option; '*rpm -q <package name>*'. This will show you the details of the package, which will be in the format 'package-version-build'—for example if you issue the command '*rpm -q rpm*' on a machine with Red Hat version 9, the result is 'rpm-4.1-1.06'.

Now, if the package does not exist, you can install it. But, if it is already installed, you can choose to upgrade, providing the package you have is a later version.

Installing

To install a new package you need to execute the rpm command with -ivh option, say, '*rpm -ivh (file name)*'. Here the 'i' stands for install, 'v' for verbose and 'h' for hash progress bar.

When you execute the command you could receive an error: 'Failed dependencies', followed by the packages required. Now, you have to issue a new command, and specify each and every dependency file in the command line. Make sure you have the package files in your current directory—copy the files from the CD-ROM or download from the Internet, accordingly.

Upgrading

If you find a previous version of the package already installed on your system you should upgrade, unless you want two versions of the same package on your system. You do so by using the -U option; '*rpm -Uvh rpm*'

Freshening

To make sure that you are upgrading to a later version of a package, you can use the -F option. Unlike -U, -F won't install the package on the system if the installation version already exists; for instance, 'rpm -Fvh (file name)'.

Verifying

Once you have installed the package, you can view the information stored by rpm for each file. The information stored consists of file size, ownership, permissions, and MD5 checksum. The command used is '*rpm -V <package name>*'. The result is a

three column output for each file, the first column contain status, the second contains a 'c', if it is a configuration file or a space if it isn't, and the final column contains the filename.

Uninstalling

To remove a package you need to use the -e option '*rpm -e <package name>*'. Before removing the package, rpm manager checks whether other packages that are dependent on one you are uninstalling. If so, it will print an error message and stop. To remove a package without dependency check, you will have to use option '*-nodeps*'.

Online search and download

If you don't have rpms, then you need search and retrieve utilities such as rpmfind. As the name suggests, rpmfind is a program which helps you find rpms. If you execute a command such as, '*rpm gimp*', you get a list of files needed by the package. The tool rpmfind detects all the dependency information and provides you with the list of files, the size needed to install, and finally, helps you download the files.

By default, rpmfind assumes you know the name of the package, but if you don't, then you can use the '*-apropos*' option. With this option, you can specify a regular expression to find the package.

The result will be a link and summary about the package found. The search is basically a simple text search carried out using the filename and the description.

Gnome-RPM

If you do not like the command prompt interface, then you here is a graphical tool for you to add and remove packages. Gnome-rpm is a graphical version of the rpm command and is fully compatible with Gnome, a graphical X Window Interface. To access this tool go to *Main Menu > Run Program*, type '*gnorpm*' and press Run. The Gnome-RPM interface consists of a toolbar, a browser window for packages and a packages display area. The browser area on the
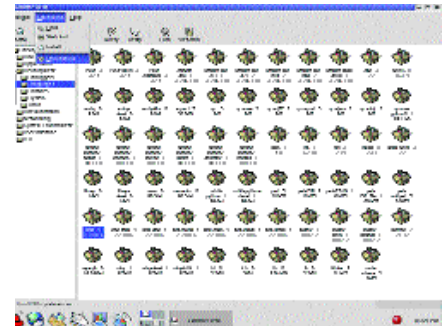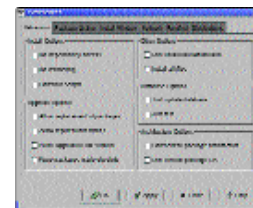

Querying checks whether the package is already installed

left pane contains package groups and sub-groups. On clicking the '+' sign besides the package, you can expand the group or the sub-group. To perform any operation—such as query, verify, install or uninstall—just select the package and press the corresponding button on the toolbar.

To configure the default behavior of the commands, you have to go to *Operations > Preferences*. Here, for each command, you can specify the default behavior under the Behavior tab.

Under the package listing tab you can

Configure the default behaviour of the commands in the Behaviour tab

specify the way packages will be displayed. In the Install Window tab, you can specify the default location to search for new rpms. In the Network tab you set the configuration for your proxy server (if any). In rpmfind tab you set details to be used while searching for new rpms. These include server address, download directory, etc. In the Distribution tab, you can specify rating as to which mirror you like to use.

RPMs

Red Hat brings along with it a Package Management tool to manage default applications, or tools that are bundled with the Red Hat distribution CD. This tool helps in easy installation, or removal of applications. To manage applications other than those mentioned in the Package Manager, you will have to use the Command-line rpm tool, or some other third party tool.

To access the built-in package manager of Red Hat, go to *System Settings > Packages*. Now, to add or remove an appli- →

Package Formats

SRPMs

SRPMs are Source rpm files that do not contain a compiled program, instead they have source files. rpm files are created from these source files. You may need SRPM files if you are unable to get the compiled version, or if there are in compatibilities between the architecture and the distributions of the compiled version.

How do I install it?

First, you have to get the source rpm file for the package you wish to install. Generally the file format for these files is '.src.rpm'. You need to create a new binary package for the source code. To do so, execute using the --rebuild option; '*rpm --rebuild <package name>.src.rpm*'. The rebuild process creates the package file in the '/usr/src/redhat/RPMS/i386' by default. The architecture may differ from configuration to configuration. Go to the folder and proceed with the installation

of the new package.

dotDEB

dotDEB (or .deb) files, represent packages in Debian Linux. The purpose of these files is similar to that of .rpm files used to distribute installable packages. Debian packages can be converted to Red Hat, or Slackware packages using freely available tools-such as Alien. The main debian programs you need to get are: dpkg-dev, debmake, debhelper and debconf. Get these from *http://www.debian.org/distrib/packages*.

Slackware

Slackware packages consist of .rgz files. It is easy to maintain the packages, as Slackware has a good interface to help the packaging using pkgtool. Alternatively, you can use command-line utilities such as installpkg, removepkg, upgradepkg, makepkg and explodepkg. Apart from these utilities, it also has an rpm2targz utility to convert Red Hat rpms.

Select individual packages to install them

Click on each package to view its details

cation, first go to the particular category and select the respective sub-category. Click on Details to view all the packages in the sub-category. Select, or deselect the application here, and then press Close. You can now select or de-select the application, and click on the Update button. If the add, or remove process is
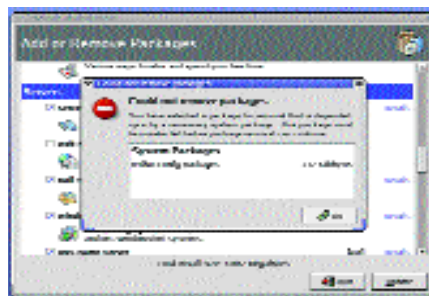
Dependency conflicts indicate conflicts between the add or remove process and another application

conflicting with some other application, then it will display a message box showing the dependencies. If there are no dependency conflicts, then it will update the necessary changes.

YaST2

YaST2 is the default Package Manager for SuSE Desktop Linux. To use the tool you will have to go to *System > Yast2* . You

Click on the install or remove software option to install software

will see the YaST Control Panel. Now, in the control panel, go to Software and double-click on 'Install or remove software'. Here, you can add or remove the application, depending upon your needs. As soon as you click on any application, it will show you the entire information about the package such as technical information, dependencies, and version, along with a short description of the package itself. The only disadvantage of this tool, with respect to default manager of Red Hat, is that it does not show details about the files within the package.

Nautilus

If you have a nautilus browser installed in your machine, then there is an easier way to find, or browse through the packages that are installed on your machine. All you do is type '`rpmdb:///`' in the Location box of the browser. You can view all the installed applications, as if you were browsing through your files.

View the package details in the Nautilus browser

Now, to find details about an application locate the application, and double-click on its icon. You will get all the details of the package such as vendor info, files, log and dependency information. ◀

PRAVEEN KURUP and MUSTALI KACHWALA

Do away with compatibility problems, display disorders, power matters, messaging headaches, and mystery files more mysterious than the errors…

Compatibility disorder

Q. I have a PIII 450 MHz machine, with 128 MB RAM and Internet Explorer 5.5. When I was installing JetAudio, I got the error message 'Incompatible version of RPC stub'. What does it mean? How can this problem be solved?
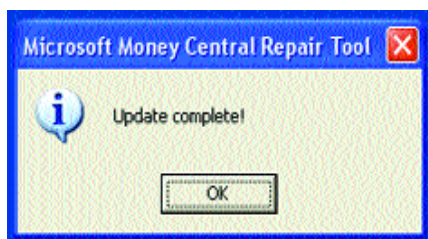*Ashwin K*

A This error occurs when the Setup program finds an incompatible version of OLEAUT32.DLL, OLDPRO32.DLL, ASYC-FILT.DLL or stdole2.tlb files. Certain pro-

Download and run the repair tool to remove incompatible files

grams might have replaced these files with an incompatible version. Download and run the .exe file available at *http://download.microsoft.com/download/msninvestor/patch/1.0/win98/EN-US/mcrepair.exe.* Click on Yes when prompted to overwrite newer files. Reboot the computer, and start the program again.

Radio matters

Q. I have a computer that runs Windows 95 and has an Internet connection through the LAN. My problem is that the old version of RealPlayer no longer plays radio stations or steaming audio, and the latest version requires Windows 98 or more. My organisation refuses to upgrade the OS. Is there any software that can play radio stations such as BBC on Windows 95?
Satish Kumar Gajbhiye

A You can play radio stations such as BBC on Windows 95 using Pirate Radio, or with the Destiny Media Player available online at *www.pirateradio.com.*

Mixed up drives

The Destiny Media Player from pirate radio lets you play online radio

Q. Till recently, I was able to use my Iomega 100 MB zip drive without any problems. I recently changed my motherboard, and then installed my printer and Zip drive. When I tried to install my CD-Writer, I reached a situation where I could use either my zip drive or my CD-Writer.
Nitesh Kumar Jain N

A It appears that you've switched to a new motherboard without installing the required drivers. Thus, Windows is most probably using incorrect drivers, due to which it ended up corrupting the ASPI layer that interacts with removable drives such as the CD-ROM, DVD-ROM, Zip and Jaz drives, etc. This driver is essential for the smooth functioning of these devices. What you can do is back up your data to another partition, or another hard disk. Then, format your system, and re-install Windows. After completing the installation, first install all the necessary motherboard drivers, and then install the VGA or Display card and sound drivers. Now, install the Zip drive's drivers. Finally, install the printer drivers and the necessary applications. This should solve your problem.

Outlook errors

Q. When I export messages from Outlook Express version 4.0, using *File > Export > Messages*, I get an error message which

says "The export could not be performed. An error occurred while initializing MAPI". However, I can export the address book without any errors.
Sanjay Kot

A This can happen if you configure Outlook Express as the default Messaging Application Programming Interface (MAPI) client. To work around this problem, restart your computer and start Outlook Express. Go to *Tools > Options*. Under the General tab, clear the 'Make Outlook Express my default Simple MAPI client' check box and click Apply. Click OK when you receive the prompt, 'The Simple MAPI client has been changed.' You may need to restart your machine for the changes to take effect. Quit Outlook Express and restart your computer. You should now be able to import or export messages without any hassles.

Fatal exception
Q. I use an ASUS motherboard with an Athlon XP 1700+ processor, 256 MB DDR RAM and run Windows 98 SE. The problem is that while loading Windows, after POST, the system shows a blue screen with the error message 'a fatal exception OE has occurred at 017F: BFF8AB97'. Why is this so?
Babu Govindharaj K

A The problem seems to lie with a memory module-timing mismatch between the RAM modules. This will mostly be the case if you use two 128 MB RAM sticks. It is also possible that the motherboard cannot detect the RAM modules settings properly. Get a BIOS update and see whether it happens again. Also, in the advanced settings of your BIOS, try setting the CPU to MEMORY ratio to 1:1, after setting all jumpers and switches back to their default values according to the motherboard manual. Change the above settings after selecting 'Load bios defaults' in the BIOS, then reboot for the changes to take effect. The problem should be solved.

If it persists, try checking the memory modules on a different PC, or a different memory slot on your machine. This would help determine whether the fault lies in the motherboard or in the DIMM slots. If the DIMM slot is faulty, then use another DIMM slot for the RAM module. In case the motherboard is defective, you will need to get it serviced by the motherboard vendor.

Oops, my display!
Q. I was playing with the display properties of my PC and set the resolution to maximum. The computer went all fuzzy, and I received the following error message—'The output signal is out of range. Please check your signal source.' Could you please let me know the process of setting my PC back to its normal resolution?
Sarveh Patil

ILLUSTRATIONS: Farzana Cooper

A Boot the computer and keep [F8] pressed. You will see a Startup menu that should have an option of booting into Safe mode. Boot into Safe mode, and access the display properties by right-clicking on the desktop and choosing Properties. Set the resolution for the monitor to what it was earlier and then click on OK. Reboot the computer. This should solve the problem.
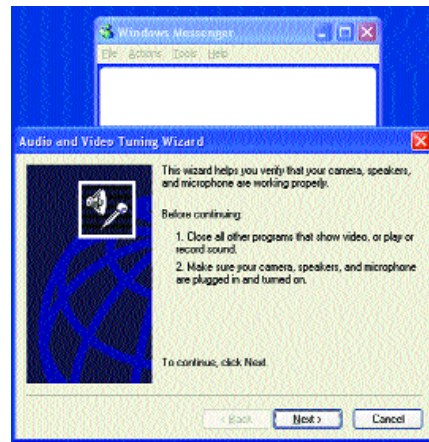
RAM compatibility
Q. I have a few questions to ask: Will a 32 MB RAM and a 128 MB RAM work together?

Secondly, I have a SIS 630 motherboard with a PIII 533 MHz processor. What is the best upgrade for this configuration?

Thirdly, how do I know whether the sound card is full duplex, or not?
Vikram Aditya Mishra

Audio tuning using MSN messenger

A Your 32 MB and 128 MB RAMs will work together, provided both of them have the same frequency, or speed ratings. The speed rating is usually printed on the RAM module itself. If they are different, set the DRAM clock to the lesser of the two, in the BIOS. The RAM speed adjustments can generally be found under the 'Advanced Chipset Settings' section. Set all the values you find there—Memory Clock, RAS\CAS Latency—to their slowest settings.

Keeping the same motherboard, the best upgrade you can opt for is a 933 MHz PIII processor, though it is really hard to find one now since Intel has officially stopped its PIII production.

If you wish to know whether your sound card supports full duplex operation, in Windows, go to *Control Panel > Systems > Device Manager*. Here, double-click on the 'Sound Video and Game Controller' item. Select your sound card and go to Properties. In the Settings tab, look for a checkbox labelled 'Allow Full Duplex Operation'. This indicates that the sound card has the full duplexing feature.

You may also use the MSN Messenger's 'Audio Tuning Wizard' by accessing *Tools > Audio and Video Tuning Wizard* or the corresponding Yahoo! Messenger utility through *Help > Audio Setup Wizard* to check whether the sound card has a full duplexing feature.

Bad clusters
Q. I have an Intel Pentium III 866 MHz and Windows 98. In the past, I had two hard disks that developed bad clusters, which I replaced. I would like to know whether I lost those two hard disks due to non-availability of a UPS. Is it necessary to use a UPS or is a stabilizer enough? If a UPS is needed, what is the best brand?
Raghu Gadiga

A Bad clusters are actually physical damages that occur to your hard disk platters. The cause for this could be either a manufacturing defect, or a voltage fluctuation. The latter can occur if you don't have an UPS or CVT. The fluctuation may not be apparent to you, but it can still cause trouble to your hard disk. Even a troublesome SMPS can do damage. So, it is advis-

able to connect your PC to a UPS as it also prevents problems caused by power failures, rather than using just a stabilizer or CVT. APC and Emerson are a couple of good brands you can consider.

Power puff!

Q. I've recently purchased a Compaq Presario that has a P4 1.6 GHz, 128 MB RAM, and a 40 GB hard drive. After a few months, it stopped working properly. It turns off suddenly, a few minutes after I start my PC. When I reboot my PC, it takes a lot of time and shows a red light. Please suggest a solution.
Vickey Kumar

A. There could be a number of reasons for this. First of all, this can occur when the inside of the cabinet gets heated. Check if the power supply fan, at the back of the tower, is working properly when the PC turns off abruptly. If it isn't, then it is a power supply issue. Call the service engineer if your machine is under warranty.

If your machine is not under warranty, then follow the instructions given below, but only if you have previous hardware experience. Ground yourself properly by touching a metal or wear an anti-static strap. Power off the PC, and open the cabinet. Check whether the RAM and video card are properly seated. Ensure that the monitor cable on the back of the video card is properly tightened. Now turn on the PC, and see whether the processor fan and the fan on the video card are spinning properly. Leave it like this, and see if the computer remains on. If it goes off, then there is an issue with one of these three components. Remember that you can only narrow down the possibilities of a fault in components such as these. If there is a problem with the motherboard, then you will not be able to detect it easily.

RAM happy

Q. I have a Compaq Presario 5000, built around the i810 motherboard. How can I dedicate more RAM to my integrated graphics chip?
Nitin Kundra

A. The Intel i810 uses a technology called Dynamic Video Memory Technology (DVMT). The OS will typically require allocation of up to 1 MB of system memory to support legacy VGA. This means that system utilities will report 1 MB less

than the actual physical memory onboard. The graphics driver for the i810 configuration can request up to 6 MB of memory from the OS to maintain the i810's maximum screen resolution of 1,024 x 768, 2 MB for a command buffer and 4 MB for Z-buffering. For high performance 3D applications, the drivers request larger allocations of system memory for AGP graphics textures. When the 3D application is closed, the OS will then re-allocate system memory back for normal Windows use. So the integrated graphics chipset will pick up the video RAM allocation from the system memory. Increasing the system memory should provide you with more video RAM. You can also refer to the users' manual that came along with the computer to see if you have BIOS settings to allocate more RAM for your video applications. This is typically found in the Advanced Chipset Settings or Integrated Peripherals sections of the BIOS.

Getting rid of Linux

Q. I have a peculiar problem with my Zenith PC, which has a Pentium 4, 128 MB and a 40 GB hard drive that has five partitions. I had Windows and Linux installed on different partitions. To format and re-install Windows from a scratch, I used FDISK, and deleted the non-DOS partition and then the logical, extended and primary partitions, one after the other. I recreated the partitions (without the non-DOS partition), and formatted the disk. The problem now is that, if I boot from the hard drive, GRUB

of Linux appears in the command line. Also, the Windows setup doesn't proceed, giving a cryptic message and starts the thorough scandisk on the system. Is there a way out?
Anirban Sen

A. GRUB stores the details of your boot partitions on your Master Boot Record (MBR). But since you deleted the partitions and created new ones, it has no relevance now. Also, when you installed Windows, it did not clear the MBR. So the information is still present in a corrupted manner. Flushing the MBR, and installing Windows again can solve this problem. The command to flush the MBR using FDISK is *fdisk /mbr*. Do this using a boot floppy. This will clear your MBR and after that, you can move on to the Windows installation.

Bad cookies

Q. How dangerous can cookies be, and how does a hacker get information about my computer using cookies?
Amit Dugar

A. In general, cookies are stored as text files and can cause no harm to your PC or spread viruses. Hackers—or rather, commercially driven Web sites with no regard for your privacy—surreptitiously plant cookies and then retrieve them in such a way that it allows them to build a detailed profile of your interests, spending habits and lifestyle, making you a prime target for e-mail based advertising.

Trojan at your backdoor

Q. The Backdoor Sdbot Virus has infected my Windows system file, i.e., msvcrt.exe. I have used Norton AntiVirus 2002 to amend this, but to no avail—it has only quarantined the file, not repaired it. Please give me a solution.
Gurpreet

A. This virus is a Trojan horse that allows the hacker to control your computer. It can also update itself regularly using the Internet. The virus shows up under the file name cnfgldr.exe or sysmon16.exe in the task manager. The executable files can be found in the *c:\windows\system* folder. The only way to repair the

infected files is to download the removal tool from *www.symantec.com*, or from *www.pandasoftware.com*. Execute this program, which will analyse all the files and remove all strains of the virus from the machine.

Help me with my help files

Q. I use Windows XP with SP1. I am unable to use the Help files from any program in my PC. I tried opening the *.chm help files but I get an error that the file cannot be found, even though it is present.
Nitesh Kisan Raut

A. The problem lies within your Windows setup. The file winhlp32.exe is probably corrupt. There might also be corrupt Internet Explorer files present. So, update your Internet Explorer or simply rerun the setup available from Microsoft's site at *http://download. microsoft.com/download/ie6sp1/finrel/6_sp/ W98NT42KMeXP/EN-US/ie6setup.exe*. This will replace winhlp32.exe, and the corresponding files necessary to run the *.chm help files.

Unidentifiable files

Q. In the recent past, I have found that many *.gid files are being created in my computer. What are these files for? I hope they are not related to any virus. I use a Celeron 300A processor with 128 MB RAM, running Windows 98.
Rakesh

A. There is no need to be alarmed. These files are created every time you use any of the Help files available within Windows, generally as *.hlp or *.chm files. These *.gid files are nothing but pointers used by the above programs for faster searches and sorting of Help databases.

Yes, you can safely delete them. However, the .gid file will be re-built by the original Help file, the next time you access it. Also, some Windows programs require the .gid file to be present, so it's better to let sleeping dogs lie.

Watching TV

Q. I have an Athlon XP 2000+ with 128 MB RAM, 40 GB hard drive and an ASUS A7N266-VM motherboard with onboard VGA and sound. The operating systems installed are Windows 98 and Mandrake. I have a Pinnacle PCTV which works fine in Windows 98. How do I watch TV in Linux? There are no Linux drivers bundled on the driver CD, or found on the Pinnacle Web site.
Avninder Singh

A. The Pinnacle PCTV card can be used in Linux, using the BT878 TV chipset support. This should be available as the bttv kernel module. The application you need to use is called xawtv. Try running xawtv from the command line to see if you have it installed. If not, download an appropriate package for Mandrake from *http://rpms.mandrakeclub.com/rpms/ mandrake-devel/cooker/i586/Mandrake /RPMS/xawtv-3.88-1mdk.i586.html*.

Shutdown shortcut

Q. How can I create a shortcut icon to shutdown my computer?
Abhishek Srivastav

A. To create a shutdown shortcut, right-click on the desktop and go to *New > Shortcut*. Then type *'c:\windows\rundll.exe user.exe,exitwindows'* as the command line—make sure you keep the spacing the same. Give the shortcut a name, such as Quick Shutdown and press Finish.

PC PlayStation

Q. I have an Intel Pentium 4 system with Windows 98 SE. I have some PlayStation CDs that do not run on it. How can I run them on my machine?
Rajeev Handa

A. You can get the CDs to run by using a PlayStation emulator that can be
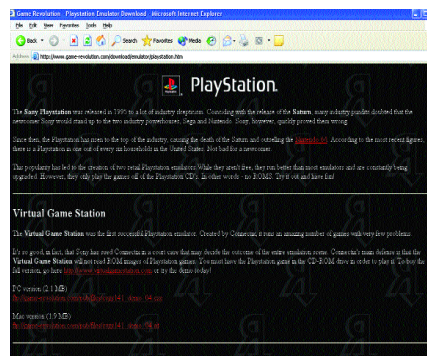
You can download the PlayStation emulator to run PlayStation CDs

obtained at *http://www.game-revolution. com/download/emulator/playstation.htm*.

Lost word

Q. I have Office 97 installed on my PC. Recently I password protected both the read and modification options of a file. Unfortunately I have forgotten the password. How can I recover it?
Rana Basu

A. There are many recovery software available on the Internet that you can use. MSOfPass97 and Advanced Office 97 Password Recovery 1.33 are a few of the most popular ones. MSOfPass97 is available at *http://www.lostpassword. com/msofpass97.htm*, while Advanced Office 97 Password Recovery 1.33 can be downloaded from *http://www.softpile.com/ Utilities/Password_Recovery/Download_ 00557_1.html*.

Corrupted C

Q. Every time I try to boot into my machine, it shows the error, 'Unable to read drive. Abort, Retry or Fail?' I used a Startup disk, and booted into the DOS mode successfully. Now the data in drive D is safe, but drive C is corrupted.

I used some data recovery utilities that were bundled in the Digit CD, however, I can see only unreadable characters instead of filenames.
Arvind Singh

A. This error appears because the File Allocation Table (FAT) of your C drive has been corrupted, or the hard drive itself has gone bad. Firstly, you can try diagnosing the problem with the hard drive. You will require a Norton Disk Doctor floppy disk, or CD-ROM for this. Boot the computer using the Norton CD or a Windows 98 boot disk, or a Windows 98 CD. If you boot via a Windows bootable, then choose the option to start the computer with CD-ROM support. Type 'NU' to start the Norton Utilities Program. Once you get to the menu, select 'Disk Doctor' and again press [Enter]. Choose 'Diagnose Disk', select C: and press [Enter] once more. In the event that Norton is unable to revive your computer, you can try recovering the data from the hard drive, and formatting and reloading the OS on the hard drive. You can use programs such as Stellar Data Shield or Easy Recovery Pro to recover the data.

tips&tricks

Jumpin'
Jukeboxes

If the audiophile in you is looking for ways on making the most of the music (and videos) sitting on your hard disk, here come some power user tips on managing the best media players in the world today.

49

Winamp 2.91, Winamp3, Media Jukebox 8, Media Jukebox 8, MusicMatch Jukebox 8, Windows Media Player 9, iZotope Ozone for Winamp 2 and Winamp3, MuchFX2 for Winamp 2, Bobware Stereo Delay for Winamp 2, iZotope Vinyl for Winamp 2, Enhancer 0.17 for Winamp 2

Find them on the Mindware CD

contents

WINAMP 2

This is the classic llama rocker—with its simple exterior and plethora of features. This skinnable player comes with video support as well as tons of new features

ILLUSTRATIONS: Farzana Cooper

Meet the library

Winamp now comes with a media library—the Winamp Library. This looks pretty similar to the Media Library in Winamp3, but doesn't contain all the advanced features. Open it by right-clicking on the Main window and select Library. You can navigate over the main sections, called Views, from the left side pane. To add your files, click on Library and select the directories containing all your media files. Winamp immediately separates the audio files from the video files, and puts each under the correct Views.

You can also choose to create custom Views with

The Winamp Library looks

specific rules for each View.

If you flip across the default audio and video Views, you will notice that there is a lot you can do in each View. For example, under Audio, you can view your collection by artiste or album. There's also a useful search facility that lets you search for files within the library, with

Search for files within the library using the search facility

the results displayed in the Result pane. You can narrow down your search by entering in multiple keywords. You can choose to either enqueue the results to the current playlist or play it straight off the library. Here's another cool tip; if you right-click on the track in the Results pane, you can choose to play all the tracks by the same artist, or play all the tracks in the album, or add the files to a playlist. Right-clicking on the track in the Result pane will let you access and change file information, as well as

remove the file from the library and the drive.

Playlist Editor

Winamp 2's Playlist Editor hasn't really changed in its new makeover. However, it still remains the easiest to work with. If you have just

Winamp 2's Playlist Editor is easy to work with

loaded a huge playlist, and want to search for one specific track, getting hold of the search plugin for Winamp 2 could do it. However, you can get a quick search-and-select done by pressing [F3]. This opens up the 'Jump to file' window, where you can enter the search criteria.

Bookmarking

If you want to list your

favourite tracks such that they can be accessed in a jiffy, you can bookmark them with Winamp's convenient bookmarking feature. To bookmark tracks, right-click the selected tracks in the Playlist Editor and select Bookmark Item(s). You can also use the *[ALT] + [I]* combination for the same. To access the bookmarks, right-click on Winamp, go to Bookmarks and pick up your track from the list there.

Movies

Arguably, the coolest feature in Winamp 2 is the addition of video playback. Winamp now supports a wide variety of formats including MPEG, WMV, AVI and DivX. To playback all the DivX videos,

You can also watch movies using Winamp 2

Shortcuts

Task	Shortcuts
Play, or Restart, or Unpause	[X]
Stop	[V]
Pause	[C]
Next Track	[B]
Previous Track	[Z]
Winamp Preferences Menu	[Ctrl] + [P]
Winamp Library	[Alt] + [L]
Adding Bookmarks	[Alt] + [I]
Volume Increase/Decrease	[↑]/[↓]
Cycle focus around the windows	[Ctrl] + [Tab]

you need to install the DivX codec bundle separately.

Winamp's video window is tightly integrated into Winamp itself. Just drop the videos into the playlist and click on them—your movies will start playing!

Right-click anywhere on Winamp, and navigate to *Options > Preferences*. From here, you can configure video playback. If the video play-back quality appears to be inferior, try turning off the Allow video overlay option.

Plug-ins
With Winamp, you have plugins for just about everything-from general plug-ins to input and output, as well as DSP and visualisation support. You can find them at *www.winamp.com*.

dio and the Winamp brows-er. To toggle the Thinger, click on the Winamp symbol on the bottom right side of the main window.

Playlist Editor
The Playlist Editor has just about all the features that Winamp 2 has, and some more. You can use the Playlist editor to drag and drop in files from all over your collection, and then use the extensive sorting and organising features to sort your music and videos. For example, if you have duplicate entries in the playlist, weed them out by going to *Sel > Select duplicates*. This will highlight, and list them in the Playlist Selec-tion window at the right side. To remove them, click on *Del > Delete duplicated items* or right-click in the Playlist editor and select 'Remove duplicated entries'.

Quick selection
The Quick Selection box, lets you search for files quickly using specific search terms.

The results of your search are displayed in the Playlist Selection window. If this fea-ture has been turned off, you can enable it by making the Playlist Editor window active and pressing [F3].

Media Library
The Media Library is a splen-did Winamp3 addition, and lets you catalogue your audio and video files. You can enable this through the Thinger or by right-clicking at the main window and selecting Media Library. Start by adding in all your audio and video files. You can then use the Media Library to add the selected songs to the Playlist Editor. It also features a handy search option and the inter-face has four windows that you can use to sort the titles in the list by artist, album, genre, comment, genre and year, and also use a combi-nation of all of the options to filter out the results.

Multiple Playlists
You can open up multiple

WINAMP3

NullSoft's Winamp3 is Winamp 2 on steroids. It comes with support for a whole load of audio and video formats

Main window
The Main window in Winamp3 is the hub of all the activity—you can con-trol all playback settings from here. Winamp3 also

Tweak all playback settings in the Main window

has built-in support for crossfading that you can toggle from here.

Advanced Equaliser settings
The default Equaliser inter-
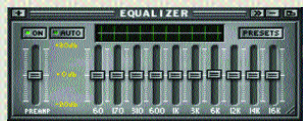
Use the Advanced Equaliser Settings to tweak crossfading

face doesn't let you access the crossfading and channel balance functions. You can enable this by clicking on the third button from the right, on the top-right hand side of the window.

The Thinger
The most visible feature in Winamp is the thingie called the Thinger. It pro-vides single-click access to all the other components. Use the Thinger to access
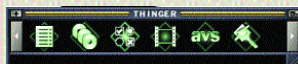
Use the Thinger to access the Video Window

the Playlist editor, the Media Library, and the Preferences menu. You can also use it to start the Video Window that will let you load your favourite video clips and movies, as well as the Advanced Visualisation Stu-

Shortcuts

Task	Shortcuts
Play, or Restart, or Unpause	[X]
Stop	[V]
Pause	[C]
Next Track	[B]
Previous Track	[Z]
Winamp Preferences Menu	[Ctrl] + [P]
Volume Increase/ Decrease	[↑] / [↓]
Cycle focus around the windows	[Ctrl] + [Tab]
Video in full screen mode	[Alt] + [Enter]
Exit full screen mode	[Esc]

51
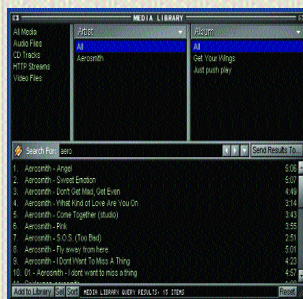
Catalogue audio and video files using the Media Library

2

Playlist Editor windows by selecting *Playlist > Create playlist in new editor*. In this manner, you can edit your playlists without making changes to your existing ones. Since the new playlist opens up in a new window, the old playlist continues to play uninterrupted. The new Playlist Editor window features full drag and drop support from the old window as well as Explorer. When you are done, you can play files in

the new window by clicking on them.

■ Viewing video

Winamp3 now supports MPEG, AVI and WMV formats, as well as the ASF streaming video format. NullSoft also has its own streaming video standard, the NSV that is fully supported by Winamp3. If you have the DivX codecs

Winamp3 supports the ASF streaming video format as well

installed, then you will be able to see DivX videos.

MEDIA JUKEBOX 8

Compared to other shareware jukeboxes, Media Jukebox comes with a rather plain interface. But beneath its ordinary exterior lie powerful organising and playback features

■ Setting options

It's very easy to configure your Media Jukebox settings. To access the Settings and Options window, go to *Settings > Options*. Tweak all the settings includ-

Shortcuts

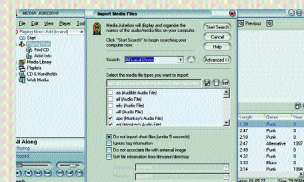| Task	Shortcuts
Play or Pause	[Ctrl] + [P]
Stop	[Ctrl] + [S]
Previous Track	[Ctrl] + [L]
Next Track	[Ctrl] + [N]
Media Jukebox Settings	[Ctrl] + [O]
Jump to Search	[Ctrl] + [F]
Jump to Playing Now	[Ctrl] + [2]
Jump to Media Library	[Ctrl] + [3]
Jump to Playlist	[Ctrl] + [4]
Toggle between mini-player and Jukebox mode	[Ctrl] + [E]

ing the General, Playback recording and Encoding settings from there. Flip across the options using the scrollable list at the left side. The crossfading option here is just ideal for smooth crossfading for a long party playlist. You can configure

The Settings window

this from the Playback settings in the Options window. Another cool feature is that you can set in all file associations straight from the File Associations settings in the Options window..

■ Making libraries

The Media Jukebox library and organisation features are second to none. To start with, you can import all your media files by going to *File > Library > Import Media*. You can choose the drives and folders in which you want Media Jukebox to search from here.

Adding your files to the Library

By clicking on Advanced, you can configure additional parameters such as the type of media file, and also set other advanced options. Finally, click on Start Search to start the search. Media Jukebox will display the results and let you add them to the library.

■ Using the library

The library can be accessed from the main window, by clicking on Media Library in the left pane. The organisation tree opens up and you can browse the library by album, artiste, genre, and so on. Clicking on each of them further opens up the tree, and this lets you see individual entries under each section. You can add the files that you want to play to the current playlist by right-clicking on the file and selecting Play.

You can also rename, move, or delete the file, by accessing the options when you right-click on the file.

The library comes with a powerful search feature too. To access the search feature, click on the Media Library in the main window. In the search text pane, you can enter in the search string. The really cool thing about its search feature is that you can search using just about any criteria, including the usual artist and album, and year searches. For offbeat searches, you can search by comment, bit rate, the last played songs, the playlists, and also search giving the file types option.

Making a Smartlist

⚡ Playlists and Smartlists

Create custom playlists by right-clicking on Playlists on the left pane of the main window, and select Add Playlist, or go to *Edit > Add Playlist*.

Once you have created the playlist, you can fill it up with your favourite songs. You can drag and drop the media files from Explorer. To do so from Media Library, select the songs or the criteria that you want to import. Right-click on it, head to *Send To > Playlist* and select the playlist that you have created. You can even do this from the Playing Now list.

Smartlists are better than Playlists—you can embed special rules within them using select keywords. For example, if you want to make a selection of songs by one particular artiste for a time limit of sixty minutes,

enter '*artist=Offspring*' and '*~t=60*' in the search pane. Here ~t limits the playtime to 't' minutes. Typing in '*doors*' and '*jim morrison*' will create a smartlist that narrows down the results to The Doors and Jim Morrison. You can create any number of such smartlists based on numerous criteria that you can define.

⚡ Party mode lockup

Media Jukebox is perfect for creating party playlists where you would like to have your guests browse the playlists and have non-destructive access to the files. To access the party mode, go to View and select Party Mode. You

will be prompted for a password. In the party mode, the more advanced disk and file features (such as deleting) are protected. You will need to use the password to switch back to the normal mode.

⚡ Movies on the Jukebox

Media Jukebox can also play your favourite videos and movies. With support for the DivX, QuickTime and Real formats, this is a versatile video player. To play media files in the QuickTime and Real formats, you will need to have the QuickTime and Real players installed separately. To play DivX videos, you will need to have the DivX codec bundle installed.

MUSICMATCH JUKEBOX 8

In the age of all-in-one complete players and jukeboxes comes MusicMatch Jukebox. The all-new Version 8 of MusicMatch Jukebox has slick, colourful skinnable interface, increased Super Tagging features, as well as unique visualization features

Some common Smartlist keywords

Keyword	Usage Example
artist=	ar="jim morrison"
album=	al="morrison hotel"
name=	name="blue sunday"
numberplays=	numberplays=10 (returns all files played 10 times)
bitrate=	bitrate=256 (returns all files with bitrate equal to 256 kbps)
~a	~a blue sunday (get full album containing this song)
~s	~s 700 (limited to 700 MB size)
~t	~t 60 (Time limited to 60 mins)
~n	~n 25 (limited to 25 tracks)

⚡ Recorder quality settings

You can set in your own personal file quality preferences in MusicMatch Jukebox. To

do so, go to *Options > Settings* and click on the Recorder tab. You can set file encoding quality here, for all the supported formats. MusicMatch

This is where Quality matters!

Jukebox lets you rip and encode MP3s at upto 320 Kbps encoding quality. You can also set additional settings, such as the location of the encoded files, delayed recordings and changing the Recording Source.

Slideshow features

You can use MusicMatch slideshow to display your personal photographs as your music plays. To enable this, go to View and select *Visualizations > Chooser*. Under Select Visualization, choose the 'MUSICMATCH Slideshow Visualization' and click on Configure. This will open
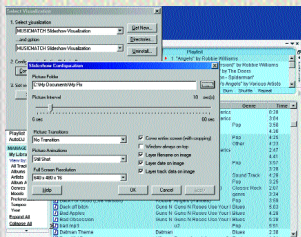
Tweak visualisations here

the Slideshow menu and let you tweak the settings. First, select the picture folder, and then choose the interval in seconds. The slideshow can display pictures that transition from one to the other, with many transition effects—you can choose and apply them from here. Final-

ly, select the screen resolution at which you want to see the slideshow, and click OK. You can preview it by clicking on Start in the Select Visualisation menu.

Music library

The music library management in MusicMatch is very good. You can add MP3s, MP3PROs, WAV and WMA audio files to My Library. You can choose to have Music-Match scan all your local
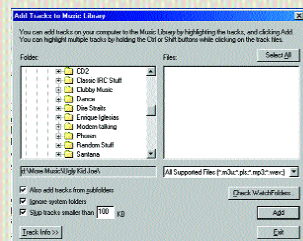
Adding tracks to the library

drives, as well as mapped networked drives for audio files. To do so, go to *Options > Music Library > Search and Add Tracks* from all Drives..., and scan the whole drive, or restrict the search to specific folders. You can also add by dropping a file into the My Library window from the Explorer.

Looking up your tags

MusicMatch Jukebox has enhanced tag support, which means that you can now embed more than just text into your digital music files. While editing and adding text and images to your audio files, you can choose to update them using the Super Tagging process. This automates the process by

looking up the data on the Internet. To use this service, highlight the track in My Library, or the Playlist, right-click and select Edit Track Tags. Within Edit Track Tags, select Lookup Tags. Music-Match will attempt to locate the information on the Internet, and return the results in the Lookup Tags Results window.

Sorting and searching the library

You can sort the files listed within My Library. To do this, click on My Library in the Music Center, and under View By, choose a new way to browse for tracks.

To locate any file within the library, click on Find in the Music Center, and enter the name of the track you want to locate. If multiple entries are present, the first instance is highlighted and shown. You can narrow down your search by being case-specific (uppercase or lowercase) and also restrict searches to the exact string specified.

Shortcuts

| Task	Shortcuts
Play	[Ctrl] + [P]
Stop	[Ctrl] + [S]
Pause	[Pause/Break]
Increase Volume	[Alt] + [↑]
Go to Previous Track	[Alt] + [←]
Go to Next Track	[Alt] + [→]
Decrease Volume	[Alt] + [↓]
Mute	[Ctrl] + [M]
Jukebox Settings	[Ctrl] + [Shift] + [S]
Open AutoDJ	[Ctrl] + [D]
Slideshow full screen	[F11]

Spinning with the AutoDJ

The AutoDJ option lets you create custom playlists automatically from those tracks in the library that have the Tag info filled in. Click on
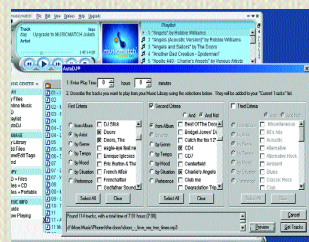
Setting up the AutoDJ

AutoDJ in the Music Center, or select *Options > Playlist > AutoDJ*. After setting the playtime in the window, you can choose from an exhaustive list of criteria, that include selecting by Artiste, Album, Genre, Mood, and so on. You can combine this across several criteria. Click on Preview to give you an idea of what you will get and when done, click on Get Tracks to add it to the current playlist.
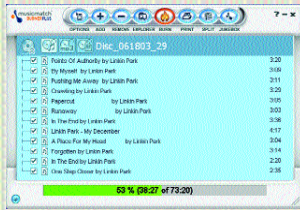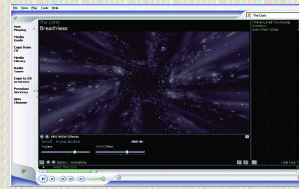
The slick Burner Plus interface

Burning CDs

MusicMatch Jukebox Basic, that is bundled in the free version MusicMatch Jukebox, allows you to make music CDs. The Burner Plus, that is bundled with the shareware version, comes with plenty of advanced features that makes it almost as good as any standalone CD writing software. To create Audio CDs, first open a saved playlist, or create one that contains the tracks that you want to burn; this will open the Burner Plus window. To add any more files, click on the Add button. You can also add tracks by dragging and dropping using Windows Explorer. Finally, when you are ready to write the CD, click on the Burn button.

SmartSplit

If you have lots of files to burn and you aren't sure how many CDs you will need, here is a nifty utility within Music-Match that will help you. First, select all the files that you want to write on the CD and drag them into the Burner Plus window. Then, click on the SmartSplit button. All your files will be divided into the required number of discs. Finally, click on Burn to get started!
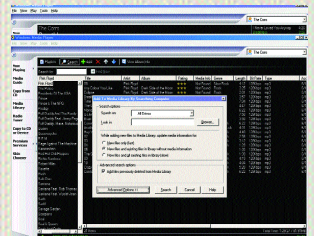
WINDOWS MEDIA PLAYER 9

With support for encoding on the acclaimed Windows Media Audio codecs, this is one skinnable player you need if you are an WMA fan!

Graphical equaliser:

Windows Media Player has a 10-band graphic equaliser that you can access and tinker around with. You can access it by going to *View > Enhancements > Graphic Equaliser*.

SRS WOW Effects

Turn it on by going to *View > Enhancements* and selecting SRS WOW Effects. You can optimise the output, specific to your audio set up, by selecting the kind of speakers that are attached to your computer. To improve the bass outputted, move the TruBass slider to the right. If you want to widen and enhance the

Tweaking the SRS WOW effects

stereo effect, move the WOW Effect slider to the right.

Media library

Before you create playlists, you should add links to your digital media files in the Media Library. The easiest way would be to add files into the library by getting Windows Media Player to scan your computer. To do so, go to *File > Add to Media Library* and choose 'By Searching

computer'. Select the options and click Search. This will scan your hard drives for media files and add them to your Media Library. You can also add tracks that are currently playing, or all the tracks in the playlist by going

Adding files into the library

to *File > Add to Media Library* and selecting 'Add Currently Playing Track'. Also, all the

Shortcuts

Here are some of the more commonly used shortcuts for Windows Media Player 9.

| Task	Shortcuts
Access the Now Playing, Media Guide, Copy from CD, Media Library, Radio Tuner, Copy to CD or Device, Premium Services, and Skin Chooser taskbar features	[Alt]+ [V] +[G]
Making your videos run in full-screen mode and restoring them back again	[Alt] + [Enter]
Playing the previous track	[Ctrl] + [B]
Playing/Pausing the selected track	[Ctrl] + [P]
Stopping the selected track	[Ctrl] + [S]
Playing the next item	[Ctrl] + [F]
Muting the volume	[F8]
Turning down the volume	[F9]
Turning down the volume	[F10]
Opening the Search box (in the Media Library)	[Alt] + [S]

55

music that you copy is automatically added to the library, as is all the media content that you purchase and download from the Internet.

Sorting the library
You can locate all the music files that you have entered into the Media Library by going to Media Library and expanding the All Music tree in the left pane. To search for any file within the Library, click on the search button. In the Search For field, enter the search term that you would like to search. The results are displayed in the details pane.

Editing media information
To edit information on any media file, locate the file within the Media Library. Then

6
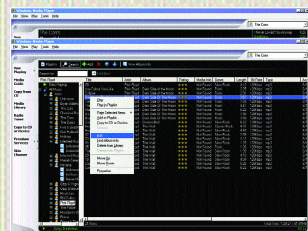
Editing information

right-click in the details pane, and select Edit to change the

media information.

Within Windows XP, you can edit the tags with the Advanced Tag Editor. Access this by locating the file, right-clicking and selecting Advanced Tag Editor.

Using the Internet
Windows Media Player has been fully integrated with the Internet. You can locate information about the albums in your playlist by right-clicking on the album in the Media Library and clicking on Find Album Info. In this manner, you can update or change information regarding an album.

Make videos look better
Windows Media Player supports a large number of popular video formats, including the VCDs, DVDs and DivX formats—you will need to install the DivX codec separately. It also comes with robust video playback enhancement features. Adjust the playback controls by clicking on *View > Enhancements* and then Video Settings. You can fine-tune the hue, saturation, brightness and contrast controls using the sliders. When you are done, click on Close.

ENHANCING YOUR MUSIC

If your MP3s sound dull and lifeless, then here is how you can enliven them

Owing to the lossy compression technology of the MP3 standard, some of the fine highs and lower thumping bass are lost after encoding.

Most players today make up for this by restoring the crystalline highs and the low rumble of the bass, and also restore some stereo separation by piping the sound through DSP plug-ins.

In Winamp 2, to access all the DSP plugins, right-click anywhere in Winamp and select *Options > Preferences* and scroll down the list to Plugins. All DSP plug-ins are located under DSP.

In Winamp3, DSP plug-ins are loaded as you start the player, and you can configure the settings there.

In Media Jukebox, you can access all the plug-ins by going to *Settings > Plug-in Manager* and picking out the plug-in from there, and clicking on Configure.

MusicMatch Jukebox lets you access and configure plug-ins from *View > Sound Enhancement.*

iZotope Ozone
Izotope Ozone is a DSP plug-in for Winamp 2 and Winamp3. It is one of the most powerful plugins available. The Winamp3 version lets you try out all the settings for a trial period. You can access all the presets, and save your own custom ones by clicking on Presets in the main Ozone window. Ozone lets you tweak the acoustic characteristics of the room, making your music sound cleaner and better.

MuchFX2
MuchFX2 is a Winamp 2 DSP plugin stacker that has been designed to let you add

more than one DSP plug-in at one go. This can be used to stack up all the DSP plug-ins that you want by clicking on the '+' (Add) button. You can also configure them through MuchFX2, by clicking on the CFG button.

Bobware Stereo Delay
This plug-in lets you configure stereo delay, crossover and delayed amplification for your music, and restores some of the stereo loss that occurs on account of the MP3 compression technology.

iZotope Vinyl
While all the other plug-ins here will enhance the way
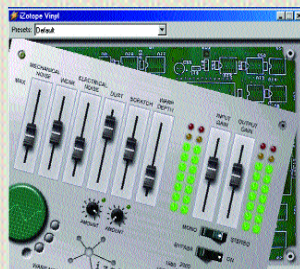
Oops, I just unscrewed the faceplate!

your music sounds, iZotope will toss you back into another age. Vinyl can make your MP3s sound as though you were playing music from an age-old LP.

Enhancer 0.17
Enhancer is a tweaker's dream, and lets you configure your DSP settings to the maximum in Winamp 2. You can use Enhancer to optimise your base and treble settings, and also set precise values for the dry signal volume. ◖

Off the Shelf
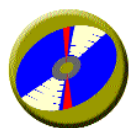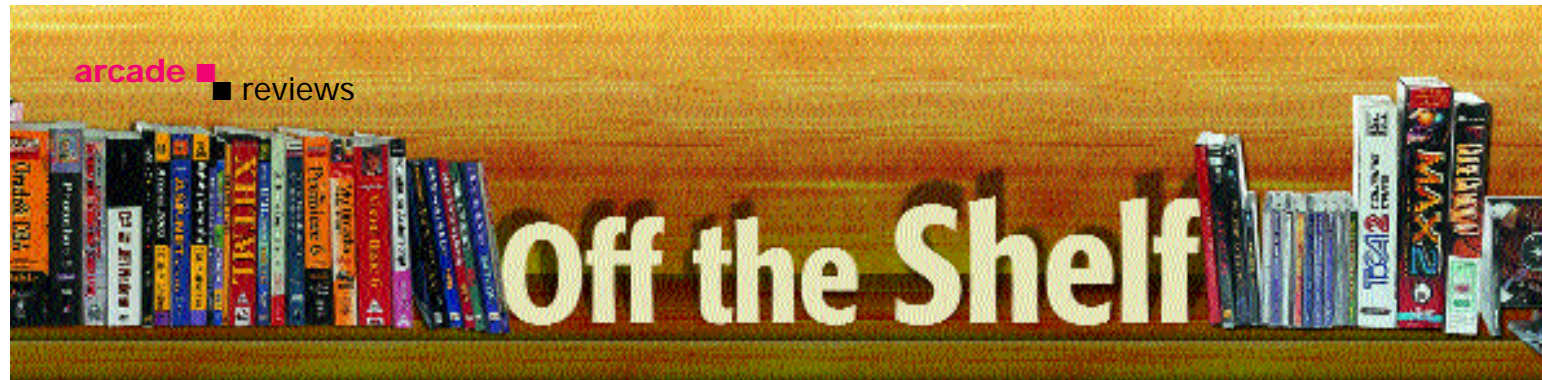
Enter The Matrix
All grace and flow

Enter The Matrix is a game that builds a story parallel to the sequence of events in the film *Matrix Reloaded*. It attempts to combine the best parts of *Max Payne* and *Mortal Kombat*, but does not win on all counts.

You can take on the role of Niobe or Ghost—the characters that play supporting roles in the actual movie. The missions vary according to the character you choose, so you can replay the game without being bored. The game has great graphics and sound, and a major portion of the game is based on third person hand-to-hand and armed combat. Both the characters have great attacking moves that are matched by good motion capture and

FOCUS! *Ghost battles Trinity in the Zen Garden*

feedback. The focus mode, which slows the entire world down, looks spectacular and provides for good eye candy. You can eliminate multiple enemies effectively using the Punch-Kick-Block system. There

is an arsenal of weapons in the armed combat system, and they are quite effective as well. The game also features an hour of unseen film footage.

The real problem lies in the Driving and the Logos missions. The driving experience is unreal—you cannot overturn an enemy vehicle or get out of your car, and even the controls are unreaslistic. The missions usually involve evading enemies. You have to fly the ship to a specific location, and avoid or destroy the Sentinels before they breach your ship. The controls of the ship are awkward and difficult to adjust to. Overall, the game could have been much better, and focussed more on action.

Distributor: Milestone Interactive Software Ltd ■**Phone:** 022–28381614 ■**Web site:** www.milestoneinteractive.com ■**Price:** Rs 1,499
System requirements: PIII 800 MHz, 128 MB RAM, GeForce 256, 4.3 GB harddisk space, Windows compatible soundcard, DirectX 9.0
Rating: ★★★☆☆
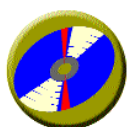
X2: WOLVERINE'S REVENGE
How much is my score?

Why can't people just stop making games out of comic strip characters? Wasn't Spiderman enough? In *X2: Wolverine's Revenge*, you play the role of Wolverine, a mutant with an unbreakable Adamantium metal skeletal structure, who can heal himself at will. He is infected with a deadly virus called Shiva, and is in search of the cure. The game has a few interesting features; where you can try cool stunts in the hand to hand combat, perform wacky moves and kick enemies using the combos, strike moves and finishing moves. The game has a high level of violence—the Feral mode has Wolverine going into a killing frenzy. Essentially, it is a game to be enjoyed only with a gamepad, the key-

GRRR! *- Mommy, how sharp are my nails?*

board cannot do it justice.

So, how tough is it to handle modelled graphics and use it to emulate the story of a movie-based game? *X-Men 2: Wolverine's Revenge* finds this to be tough indeed. The game features graphics that would make

Quake 2 look good. The sound effects are not worth mentioning. There are a few notable visual effects, such as the one when Wolverine scrapes the walls with his Claws and during some of the trick shots. The terrains are also poorly designed. The game has the common third person view that is way too irritating and meddling with the game play, due to which movements are hindered. Also, the game features minimal use of pointer devices such as a mouse or trackball, as a majority of the game inputs are based on the keyboard. Hence, the learning curve of this game is also quite high. All in all, you can give *Wolverine's Revenge* a miss, and not bother about this revengeful saga at all.

Publisher: Activision ■**Distributor:** Milestone Interactive Software Ltd. ■**Phone:** 022–28381614 ■**Web site:** ww.milestoneinteractive.com
Price: Rs 1,299 ■**System requirements:** 500 MHz CPU, 128 MB Ram, 32 MB Directx9 Supported Video card, 1.5 GB hard disk space, CD-Rom drive, Windows 98/ME/2000/XP, DirectX 9 ■**Rating:** ★☆☆☆☆
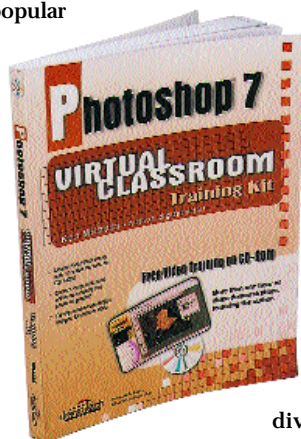
Photoshop 7 Virtual Classroom
Join the class

Photoshop is by far the most popular image editor today. Most people use it to perform the most basic tasks without even realising its potential and wondering how they can harness those capabilities for themselves.

One of the most cost effective ways to learn Photoshop is to get a good book—and this one pretty much fits the bill. *Photoshop 7 Virtual Classroom* will get you on your way to using Photoshop effectively. Before you begin, it would be a good idea to install Photoshop, since seeing what you're reading about and going through the steps at the same time makes for an easier understanding.

The software is versatile enough to be used by all graphics professionals. Photographers, designers, illustrators, Web designers, all use it in their own unique ways, and the book shows no bias to one or the other. It fairly distributes coverage of all the possible uses without going into too many details. The chapters are smartly divided based on specific sets of tasks so you can skip directly to the tasks you would find most useful.

The author's simple and straightforward writing makes for effortless reading. Every chapter has several mini-exercises, for performing a single task. The steps for these are simple, and easy to follow. Plenty of screenshots throughout the book illustrate what you're reading about, clearly. However, the book does not seem to be able to string the pieces together. How each of the processes covered here fit into completing a bigger project eludes us. Neither Web designers nor those using Photoshop for print will find the complete process described from start to finish.

The book comes with a CD that has several training videos demonstrating certain techniques along with a voice over. These help you learn faster and understand the subject much better than the explanation in the book at times. For those who want to make better use of Photoshop, this is one of the best ways to get you going.

Publisher: Dreamtech Press ■ **Author:** Ken Milburn ■ **Distributor:** Wiley-Dreamtech India Pvt Ltd ■ **Phone:** 011-3260877
Fax: 011-3275895 ■ **E-mail:** wdt@vsnl.net ■ **Web site:** www.wileydreamtech.com ■ **Price:** Rs 399
Rating: ★★★★☆

Comdex Call Center Training Course Kit
Just about answering the call

With the mushrooming of call centres all over India, the need for formal training to land jobs in them has become the focus of attention. Comdex Call Center Training Course Kit is one such book that claims to get you ready for the job.

The book starts off with an introduction to the concept of call centres, the need for it and its subsequent evolution into a full-fledged industry that has grown by leaps and bounds over the years. The first few chapters talk about the necessary computer skills needed for the job, and then proceeds to talk about the soft skills that are required to handle calls. However, it does not explain properly how to deal with tricky complaint calls. The necessary skills needed to handle them are mentioned, but the manner in which they are to be employed is not. A transcript of a conversation between an irate customer and an agent would have provided a better understanding about the nature of these calls, and how they should be handled. The use of empathy is also not sufficiently stressed upon.

There is a section on the types of e-CRM software used in call centres—a demo version of which is provided on the CD. Correct pronunciations for accent neutralisation are well dealt with and the accent-training tutorials on the CD are helpful. The book also includes a chapter on personality development and stress management. The recruitment process for the job is outlined satisfactorily. The CD also contains e-books on British English, American English and written and spoken English.

On the whole, the book gives you a fair idea about the call centre industry, but reads like a textbook and does not generate the desire to know more. The language and sentence structure used in the book also leaves much to be desired. This can be a pitfall for a book that tries to talk about an industry that mainly depends on speech.
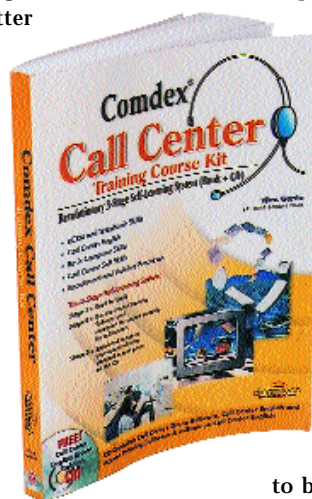
Publisher: Dreamtech Press ■ **Author:** Vikas Gupta ■ **Distributor:** Wiley-Dreamtech India Pvt Ltd ■ **Phone:** 011-3260877
Fax: 011-3275895 ■ **E-mail:** wdt@vsnl.net ■ **Web site:** www.wileydreamtech.com ■ **Price:** Rs 199
Rating: ★★☆☆☆

JDM Throws a Fit

Muscular Fingers? Yes, that's exactly what all of us have, after spending in excess of 8 hours a day at our keyboards—playing *Postal 2* and *Quake III* of course. Unfortunately, that's the only muscle most of us have. For some of us, the only scenery we see is the one on our desktop wallpapers. Tired of being stereotyped as geeks and nerds, JDM decided to go on a fitness regeim.

It all started with a picnic, organised for, and by our design team. Off they went on a Friday afternoon to Kihim beach, spent the night in Kihim village, and had a rollicking time. Getting a little carried away with the merry making, one of our designers,

START YOUR ENGINES: The design team, (L to R): Mahesh Benkar, Parag Joshi, Vasuki Padaknandala, Rohini Dalvi, Solomon Lewis, Atul Deshmukh and Mexy Xavier

Sachin Dalvi, didn't watch his step and fell into a 6 foot ditch. Thankfully, the only thing that was hurt was his pride. The next morning, they went on to Alibaug Fort, and spent the day sightseeing famous places such as an ancient Ganesh Mandir and Alibaug Market, before heading back for home, quite content and finally appreciating the fact that 'natural beauty' isn't a PhotoShop effect.

Next on the 'company bonding' list, was the unveiling of Brawnz, our very own gym. This was in the making for a month, and finally opened on the 16th of June. All and sundry were present for the traditional cracking of the coconut by Kabir Malkani, who was the driving force behind this project. After all the inhouse advertising, pestering and at times even arm-twisting, Rs 27,000 was collected. As promised, the big boss, Maulik Jasubhai, generously contributed an equal amount, bringing the total to a whopping Rs 54,000. With the help of friends, contacts, begging,

AND THEY'RE OFF: The design team at a pit stop. (L to R) Mahesh Benkar, Solomon Lewis, Parag Joshi, Rohini Dalvi, Nosh Xavier, Vasuki Padaknandala, Sachin Dalvi, Atul Deshmukh and Kishan

borrowing and stealing, Kabir and team managed to get enough equipment for a full fledged professional gym. Thus began our preparations for world domination, or so we feel when we're sweating it out in the former recreation room at work.

With over 50 members of our staff pumping iron, we're sure to go from strength to strength. So here's looking forward to cutting the flab, ironing out the chinks and staying put as geeks, but muscular ones at that.∎

NO SWEAT: Some JDMites getting into shape

ADVERTISING AGENCIES BEWARE: In house creativity at its best, especially when expecting contributions and (ugh!) excercise

▶ Here's a car you don't want to overtake

How do I start the damn thing?!
▼

Now you have no choice, but to upgrade to MSN Beta 6! ▶

Computer one-liners..

- If it wasn't for C, we would be using BASI, PASAL, AND OBOL.
- A bug in the code is worth two in the documentation.
- According to my calculations the problem doesn't exist.
- A computer's attention span is as long as its power cord.
- Adding manpower to a late software project makes it later.
- All computers wait at the same speed.
- All you need to know is the user interface.
- Computers follow your orders, not your intentions.
- Computers make very fast, very accurate mistakes.
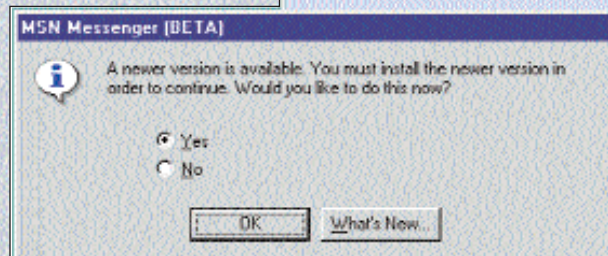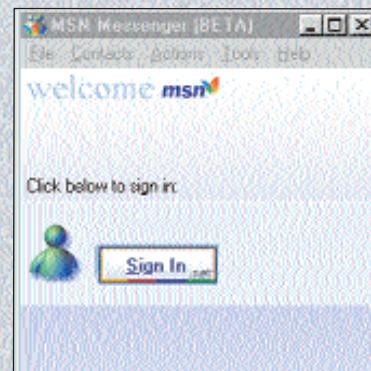
We bring you your horrorscope...

Cancer
June 22 - July 23
As a truly moody Sun sign, you will often be prone to lazyness. The only way to change your life is to get off the .Net, have a little Java, and head out into the Deep Blue yonder.

Your chance to bite back!

Computer PJs

Anyone got the address of the horseshoe Web site?
You'll be lucky.

Have you got the address of the butter Web site?
Yes, but don't spread it around.

If doors have a Web site shouldn't windows have one too?
We'd better, or it will be curtains for us.

Our Web site should have more colour, more games, more sound!
Look, what more do you want? Blood?

We Gnus have a new Web site!
Really? That's Gnus to me!

What did the maths homework Web site say to the geometry Web site?
Boy do we have problems.

Who has the best Web site in the jungle?
The Onlion King.

Who started the campfire Web site?
Some bright spark.

Why do witches never get Web site addresses wrong?
Because they are very good at spelling.