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**36** graphics cards  
**24** gaming devices



**Grid Computing**

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**Robotics** in India

**Collaboration tools**

for effective brainstorming

The lowdown on what goes into  
**online gaming**



# Freeware

**PLUS**

Inside Ultra Wideband

Reviewed: Mafia & Creative Inspire  
6600 6.1 speakers

**Jasubhai**  
DIGITAL MEDIA  
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# Simply hit delete!

**I**t's annoying, offensive and expensive, apart from being a complete waste of bandwidth. Yes, we all hate spam and wish that someone would do something to prevent spammers from clogging our mailboxes.

But the sad truth is that there are no clear-cut laws for regulating unsolicited bulk e-mail. Plus the economics of spamming are just too good to ignore: sending out vast amounts of e-mail is very cheap and even a small per cent of replies are enough for the spammers to make money. With entry barriers being so low and potential profits so enticing, the problem of spam is likely to get worse before it improves.

Experts predict that in the next few years, we'll all receive upwards of 10 junk e-mails a day. That's probably more than the official e-mails that most of us send or receive on any given day.

So who is to blame for this mess?

We are. We've dug this hole ourselves and now are living with the consequences.

The Internet is a revolutionary communication tool that allows us to keep in touch with anyone who is connected to it. But as with all technological advancements, it also has the potential to be exploited.

We've been taught right from our childhood to never talk to strangers and to be very careful while giving away personal information. Surely none of us roam the city streets wearing a T-shirt claiming: "Hi I'm Joe Simpleton. This is where I live and you can call me anytime on this number." But for no apparent reason, this common sense wisdom deserts us when we're online.

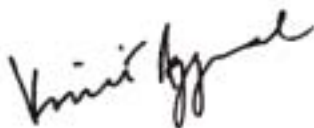
Sure, for some of us, it might be a job requirement to make available our e-mail addresses on company Web sites and other open forums. Unfortunately for these poor souls, there's no path to redemption other than to simply shrug off spam as a necessary evil.

But for the rest of us, it's simply a matter of making a small shift in our online habits—that we will not make available our e-mail address to any and every person or Web site that asks for it.

The real challenge however is to find a permanent solution for this widespread digital epidemic of the 21st century.

Our best hope to eradicate spam is to, well, simply ignore it. Yes, that's right. Spam wouldn't exist if it wasn't so successful.

Because all it takes is one sucker in every 10,000 junk e-mails sent out to make a spam operation worthwhile.



vinit\_aggarwal@jasubhai.com



Vinit Aggarwal  
Assistant Editor

“With entry barriers being so low and potential profits so enticing, the problem of spam is likely to get worse before it improves”



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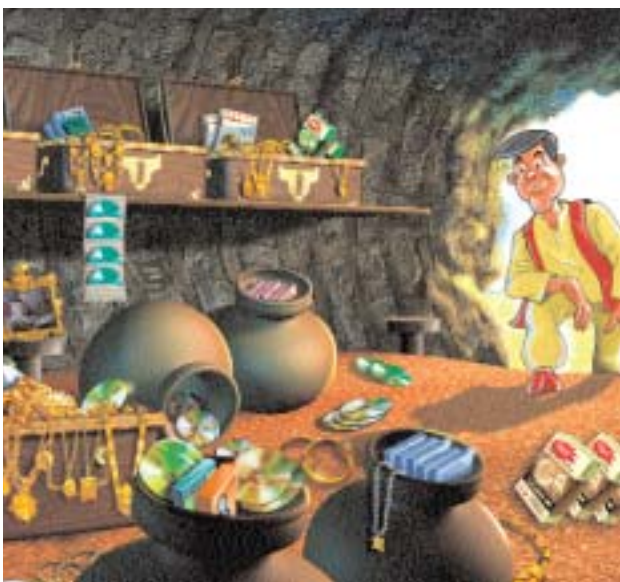
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- COMPRO VideoMate Cinema
- CREATIVE 3D BLASTER5 RX9000 Pro

- ENNYAH Digiforum GeForce2MX 200
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interactive

## HIGHLIGHTS

## Audacity

Size: 1.55 MB Type: Free  
Mindware\Software\Multimedia

## Black Hawk Down

Size: 124 MB Type: Trial  
Playware\Arena\Games

## Chain Reaction

Size: 3.75 MB Type: Trial  
Playware\Arena\Funzone\

## Eudora 5.2

Size: 6.13 MB Type: Free  
Mindware\Software\Internet

## Isobuster 1.2

Size: 2.20 MB Type: Free  
Mindware\Software\Multimedia

## MySQL 3.23

Size: 13.3 MB Type: Free  
Mindware\Software\Developer Tools

## NATATA eBook Compiler

Size: 1.23 MB Type: Free  
Mindware\Software\Home

## PGP 8.0

Size: 8.44 MB Type: Free  
Mindware\Software\System

## Praetorians

Size: 73.8 MB Type: Trial  
Playware\Arena\Games

## SequoiaView 1.3

Size: .553 MB Type: Free  
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## VirtualDub 1.4.11

Size: .748 MB Type: Free  
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## KNOW YOUR CD

## MINDWARE\SOFTWARE\DEVELOPER TOOLS

The Developer Tools section in your Digit Mindware CD brings you tools that you can use for developing software applications. The Developer Tools that we feature this month are the best free tools that you can find that will aid you in your work. On the Mindware CD this month is the official Java JDK, v1.41 that you will need to compile



and execute Java programs; JCreator, a high quality IDE for Java; Bloodshed Dev-C++, a versatile C/C++ IDE that comes built in with the Windows MinGW port of GCC, the acclaimed C/C++ compiler as well as several other tools for other languages. We also feature the MySQL RDBMS package, which is a robust and scaleable RDBMS.

## MUST TRY SOFTWARE

## BloodRayne

BloodRayne introduces the sexy, supernatural agent BloodRayne. An unholy union of human and vampire gave rise to the Dhamphir and agent BloodRayne was raised and trained by a secret governmental agency to hunt down and eliminate global evil forces. Now she must take on an occult faction of pre-Nazis and their army of vile, unearthly ghouls to prevent them from unleashing creatures of unfathomable terror onto the world. Agent BloodRayne's lethal repertoire includes inhuman strength, spectacular leaping and acrobatic skills, night vision, zoom vision and slow-motion perception that enables her to weave in and out of bullets.

Size: 168 MB, Type: Trial  
Playware\Arena\Games

## OpenOffice.org 1.0.2

OpenOffice.org is a free, high-quality office suite. The product is a multi-platform office productivity suite, which can hold its own against any commercial product. It includes the key desktop applications, such as a word processor, spreadsheet, presentation manager, and drawing program, and has a user interface and feature set that makes it very similar to other office suites.

Sophisticated and flexible, OpenOffice.org also works transparently with a variety of file formats, including those of Microsoft Office. Users of other office suites should find it easy to work with OpenOffice.org.

Size: 49.6 MB, Type: Free  
Mindware\Software\Office

## Opera 7

Opera is a fast, user-friendly, versatile Internet/intranet browser that also includes a newsreader. You can run multiple windows even at start-up, and special features are included for users with disabilities. Opera also features integrated search and instant messaging; updated e-mail support; improvements in memory usage; and accessibility to different Web sites.

Opera 7 features a bright blue-and-white interface and some very slick user friendly enhancements, that include recovering from a crashed session and mouse and keyboard gestures which play an integral role in surfing which can make navigating the Web quick and painless.

Size: 12.6 MB, Type Free  
Mindware\Software\Internet

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## WEB SPECIAL

### One For The Road

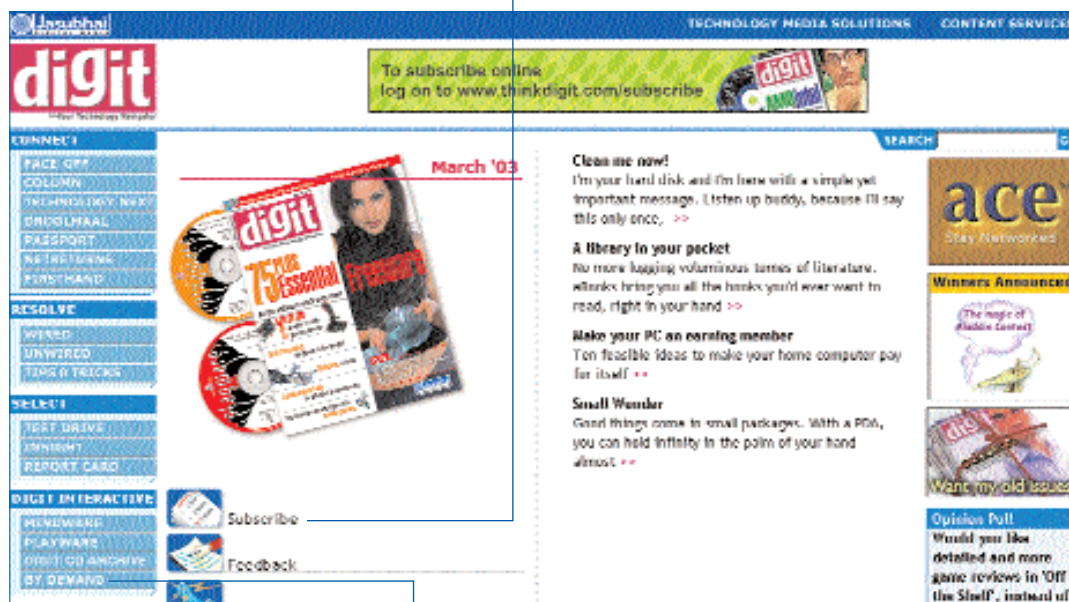


You don't need to get your hands greasy any more—the smart technology that goes into your automobile will help

you derive the most from your vehicle, and even stands by to give you a safer ride. Find out what today's power machines have under the hood.

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## BY DEMAND

You get to choose what goes on Digit Interactive. This month you have chosen  
**Merriam Webster's Concise Dictionary 2.07 (1.57 MB)**  
**IGI 2: Covert Strike single-player (138 MB)**  
 You voted for these and you can get them next month!

## WEB SPECIAL

### Picture Perfect

PIM, the technology behind today's printers can reproduce images on paper, just the way you see it when you shoot that one-in-a-million scene. Find out how you get to see on paper what you see in the viewfinder—photographic prints that are clear, bright, crisp and real to life.



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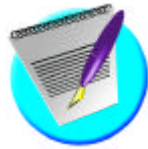
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# news feed

DIGIT MARCH 2003

## hypothesis

### SongPro

#### ■ What is it?

The idea of Ronald L. Jones, this is a Game Boy Advance (GBA) add-on that looks like a GBA cartridge. It can be used to download music that can be played on the GBA, and flash digital images of the CD covers corresponding to each song.

#### ■ How does it work?

The SongPro fits into the game cartridge and comes with a USB link with which it can be connected to any Internet-connected PC for digital music downloads. The songs, song lyrics and CD covers, etc, can be downloaded from the homepage at [www.songpro.com](http://www.songpro.com). It also comes with music management software. It utilises the GBA's 3-inch colour screen to display the digital images. It comes with a 32 MB Compact Flash card that provides the required memory for storage, and earphones.

#### ■ What does it do?

The SongPro turns the Nintendo Game Boy Advance into an audio player. You can hear both MP3s and WMAs. The technology prevents unauthorised copying of copyrighted music. Future models of the SongPro will allow downloading and viewing multimedia files such as music videos and movie trailers.

## Routers can be 'selfish'

Two Cornell University computer scientists have concluded that computer networks tend to be 'selfish' when they try to route traffic by the fastest pathway, leading to a congested and slow pathway. Researchers constructed a mathematical analysis of how routers direct packets and found that the average time of travel could be increased by up to 1.33 times compared with a regular system. Addition of more interconnections in the network could also be counterproductive because of an effect called Braess' paradox, the researchers said.

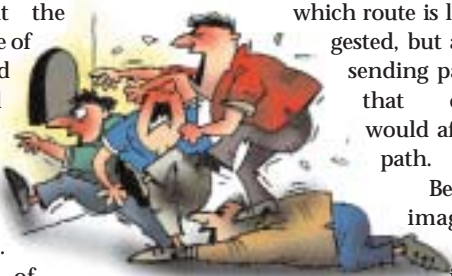
According to the paradox,

the packets of information would simply hop from one path to another—much like drivers switching lanes in a traffic jam—actually slowing down all the other packets traveling on those pathways.

To improve how routers direct traffic, they suggested that they consider not only which route is least congested, but also how sending packets in that direction would affect that path.

Being more imaginative, a router in some cases may

end up choosing pathways that are not necessarily the fastest for delivering the packets, but which could still result in lower average times for all the transmitted data.



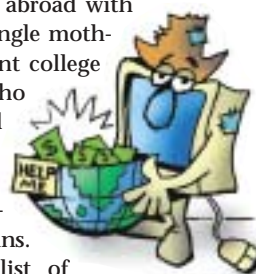
## Now 'begging' in cyberspace too

The Internet is being used for what some now dub as 'cyberbegging'. This trend is catching on abroad with struggling single mothers and recent college graduates who are saddled with unpaid credit card bills and student loans. While the list of woes differs from site to site, they all ask for money via their home pages.

Christine Kent, for instance, has featured her cat at [SaveBuster.com](http://SaveBuster.com). She claims that her site actually raises money not for herself or Buster, but for a San Francisco non-profit organisation that helps people with AIDS and other illnesses keep their pets.

Observers, though, are skeptical that this is a genuine trend and are asking cyber-surfers to be wary of such sites.

Cyberbegging started gaining momentum late last year after US-based Karyn Bosnak asked for money to pay off his over \$20,000 debt.



## New browser to rev up Internet experience

A 16-year-old Irish student, Osmani, has created a new Web browser that may be able to boost browsing times by up to 600 per cent. The browser claims to have 120 search engines, all the major media players, a DVD player, and an HTML and WAP editor built in. It is called the Xwebs Mega Browser.

Osmani said he has developed an algorithm that speeds up the way information is handled inside the browser. The

technique takes advantage of the features of a particular type of server used widely on the Internet.

The browser handles multiple requests for information, he said. So, instead of a single stream of information, several streams are processed simultaneously. In general, the task of bringing over a Web page is divided into a set of smaller tasks, cutting the time it takes to reassemble a Web page on the computer screen.

## snapshot

At any given moment, 4 million users use **KaZaA** to share over 800 million files

Source: CNN





# Playing PC games is good for you

Games of today are considered to be no-brainers with lots of shoot-em' up action involved. Everything that moves is shot at with an arsenal of weapons which would even put an army to shame. But this thought is in for some restructuring.

Studies of players and teams are showing that these games are much more complex and intriguing than most expectations. Scientific studies reveal the complex culture surrounding the games, as well as some reasons why people find them appealing. Professor Talmadge Wright and colleagues at Loyola University, Chicago, have spent hours studying *Counter-Strike* (a very popular *Half-Life* Mod) culture by taking part in games, interviewing players



and reviewing the text files of in-game text conversations.

Wright said the research shows that *Counter-Strike* is much more than gun-toting gameplay and raking up kills. He said the strategy and tactics used by many regular players and teams often makes it seem like a game of chess. The importance of the social side of *Counter-Strike* was revealed in the constant banter, in-game jokes and insults that people

exchanged during play.

Players tended to bring their offline culture with them when they play, with the most common emotion being laughter. The only reason that people could get away with insulting friends and foes was because they knew them so well, he said. People could live their fantasy roles which otherwise would not be possible. For this reason, and others, Wright believes that gaming is undoubtedly good for players.

## Mobile chips get broadband-friendly

Australian researchers unveiled a chip that lets cellphone users receive high-quality face-to-face video and other streaming media at rates faster than a home broadband connection. The chip, developed by Bell Labs in Australia, works on a next-generation cellphone network and can run programs at up to 24 Megabits per second—almost 20 times faster than a traditional T1 line.

It lets users with wireless devices on a 3G network conduct video teleconferences, get corporate data, send and receive multimedia applications such as MP3 tones, video clips and slide show presentations. Analysts say that the chip could compete head-on with other WiFi wireless Internet networks, which have, of late, become hugely popular.

## redalert

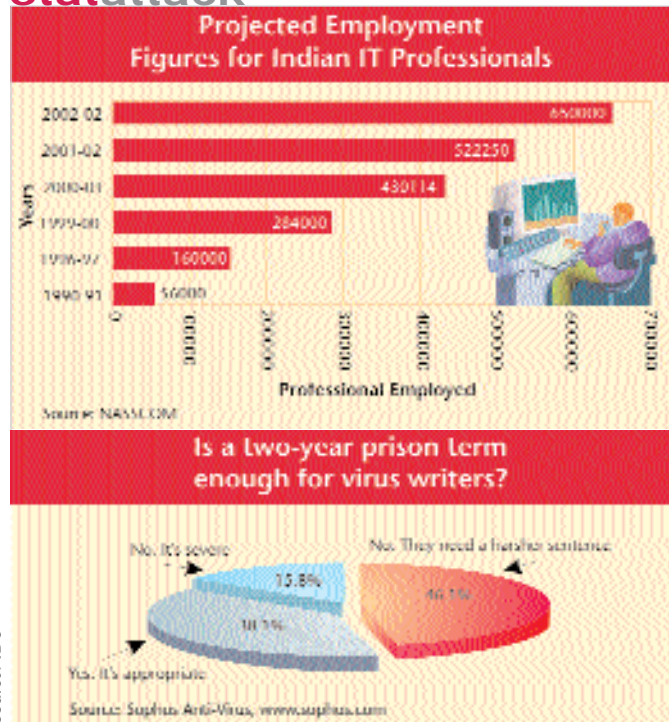
### Unreal security risk

PivX Solutions has announced that there are major flaws in the *Unreal* gaming engine, that could make your game server and client vulnerable to several fatal network attacks, including local and remote DoS attacks, execution of malicious code without size limitations, and more. Windows, Linux and Mac OS are equally vulnerable and playing a game on these platforms makes the user vulnerable to attack. Moreover, since the flaw is in the *Unreal* engine, all the games utilising the *Unreal* core are at risk. These include *Unreal Tournament*, *UT 2003*, *America's Army*, *Deus Ex* and as yet unreleased games such as *Navy Seals* and *Hired Guns*. PivX has posted a free tool that checks for malicious code within a system ([www.pivx.com/luigi/mytoolz/unrcheck.zip](http://www.pivx.com/luigi/mytoolz/unrcheck.zip)).

### Java and a virus hoax

Beware of an e-mail virus hoax that claims the executable file, *jdbgmgr.exe*, may be present on your hard drive. If it is, you are asked to delete it. The file *jdbgmgr.exe* is the Microsoft Debugger Registrar for Java, and it may or may not be present on your computer. Deleting this file may impair your system's normal functioning. So delete this e-mail hoax if you have received it, and do not open any .exe attachments that come with it. If you've already deleted your *jdbgmgr.exe* file, you can reinstall it from [www.microsoft.com](http://www.microsoft.com).

## statattack



## CPUs mounted on paper

A young Swedish company is printing really cheap chips. The company, Cypak, has technology to mount a very small microprocessor, which it created, on paper (or inside a credit card), as well as a technique to print sensors, switches, and very short-range antennae on the same paper, using special conductive inks.

Cypak's CPU is designed to take input from a variety of sensors. Cypak's technology currently costs a dollar or more per unit. That's pretty cheap for a computer, but still too expensive for everyday products.

## Gateway connects gadgets to the laptop

Gateway has launched a Laptop that is bundled with a memory card reader. This helps in using several Flash Memory cards which are used by MP3 players and digital cameras. The reader forms a part of the revamped version of Gateway 400L model laptop computer, which includes a 1.8 GHz Intel Celeron Processor, 256 MB DDR RAM, 30 GB hard drive and a 15-inch XGA display panel.

The laptop is set to sell for a promotional price of \$999 after a \$100 rebate. The Memory Card reader can read several popular Memory Card formats such as Memory Stick, Secure Digital (SD), IBM Microdrive, Compact Flash, Multimedia Card Memory and SmartMedia. Future models will carry the memory card reader as an optional \$50 upgrade from a floppy drive.

## Running Linux on iPod?

In recent weeks, Bernard Leach, a computer enthusiast has managed to get Apple's iPod to run parts of a version of Linux—but at the cost of some of the device's key features. He was able to get Apple's digital music player to run basic parts of the uClinux version of the Linux operating system.

However, several of iPod's key features were sacrificed in running Linux. Leach's Linux-equipped iPod could play audio or display simple

graphics, but it could not use the iPod's scroll wheel, remote control, or the FireWire port—the iPod's only means of exchanging data with other devices. And although the Linux-equipped iPod could play audio, even its MP3 playback did not live up to expectations.

However, Leach is very excited about the whole project and has high hopes for a penguin-powered version of the iPod.



## Kon-fabulous Mac tool

In the mid-1990s, two programmers, Arlo Rose and Greg Landweber, launched an interface revolution with Kaleidoscope, a tool that allowed everyone to customise the look of their computer. It became very popular since many users designed their own funky interfaces which they shared freely with others over the Internet.

Rose has now teamed up with engineer Perry Clarke to release a new piece of software to help people create

little custom applications to do almost anything they can think of—from automatically gathering news headlines to ordering items over the Internet.

Called Konfabulator, it is a JavaScript runtime application for Mac OS X that runs little custom programs called Widgets. These Widgets can be almost anything, from games to system monitors, stock tickers, utilities or Web services. Konfabulator is extremely slick and uses Apple's Quartz rendering engine to give the Widgets beautiful, detailed graphics and silky-smooth animation.

It is priced at around Rs 1,250 and includes a digital clock, a To Do list, a calendar and an application for viewing the current weather.

## snapshot

Worldwide sales of PCs will touch **147.5 million units in 2003**

Source: IDC



## heroes

**HP: Recycling Ahoy!**  
Hewlett-Packard has launched a new program that will give consumers up to \$50 towards the purchase of new products in exchange for recycling their old equipment, from any manufacturer, through HP's recycling service. HP may either donate or recycle the old computers.

**GNOME and KDE**  
With the launch of the new edition of GNOME, Linux desktop managers GNOME and KDE are looking at common specifications to give increased interoperability, thus benefiting Linux users on the whole, and encouraging the trend of Linux desktop adoption by businesses and governments.



## zeroes

### Floppy Drives

The demise of the floppy drives seems imminent after Dell announced that it will stop shipping them as standard accessories on high-end Dimension computers from next month, instead offering a 16 MB portable USB drive as a replacement.

### Cyber Warfare

US President George Bush has signed secret orders that authorise the right to wage cyber warfare should America be attacked, and invade foreign networks to shut down all essential services including power supply and phones.



## Barton doubles L2 cache, slows clock speed

AMD has announced the launch of a new core for their Athlon processors named Barton. It features a total of 640 KB of on-die cache, up from 384 KB on the older Thoroughbred core. The new core features the same 333 MHz front-side bus. While the size of the L1 cache on the processor remains unchanged, the L2 cache has been upped from the earlier

256 KB to a good 512 KB.

The 2800+ with the Barton core runs with a slower clock speed than the 2800+ with the Thoroughbred core, thus allowing AMD to keep the same processor rating despite the increased cache. AMD's rating system is officially based on the performance of current processors relative to AMD's original Athlon core, but the numbers

mirror the clock speeds of competing processors from Intel.

The new Barton 2800+ runs at 2.083 GHz, compared with the older 2800+ clock speed of 2.25 GHz. The Barton 3000+ runs at 2.167 GHz. It is made by a 0.13-micron process. The increased cache memory increases the die size from 84 mm<sup>2</sup> to about 101 mm<sup>2</sup>.

## Rambus develops technology to make chip connections faster

Chipmaker Rambus has readied a technology called Redwood that lets semi-conductors exchange data at very fast rates. It performs the same functions as other standards, such as AMD's HyperTransport. It transfers data at 6.4 GHz. The jump in speed comes from an innovative circuit board design. Existing

parallel buses can shift data rapidly, and they generally require that the data is synchronised while it travels from one chip to another.

This leads to a design requirement which keeps all the interconnects between various chips equal, depending on how the chips sit on the circuit board. Redwood

gets around this drawback by incorporating a technology called FlexPhase that allows data to travel asynchronously. It will be compatible with chips rigged for various other input-output standards. The company will charge fees for the engineering design services, from the company implementing Redwood.

## Broadband through your electric switches

For people residing in the far suburbs of the UK, broadband services from Fast Net, a UK-based company, could soon be available via electricity lines. Trials of this technology have already been run in the small Scottish towns of Campbeltown and Crief. They were a huge



ILLUSTRATIONS: Farzana Cooper

boost for the company with speeds up to 2 MB per second—faster than most broadband services on offer in the UK.

The price for the service could be very affordable. The speed and price of the commercial service has yet to be decided but the firm says it will be competitive.

## Blu-ray Disc technology gets the go-ahead

The DVD forum just got better and stronger. Hitachi, LG Electronics, Matsushita Electric Industrial, Pioneer, Royal Philips Electronics, Samsung Electronics, Sharp, Sony and Thomson have announced the arrival of a new format—Blu-ray Disc technology, a next-generation recordable DVD format using blue-violet lasers. Here, data is read off a blue-violet laser beam as opposed to red laser beams used in today's optical drives.

The blue-violet laser beam

has a shorter wavelength than a red laser beam, enabling data to be packed with a higher density. This new technology enables storage of 27 GB of data per layer as opposed to conventional DVDs which enable storage of 4.7 GB of data per side. It is seen as a large step towards enabling the recording of high-definition television broadcasts on a DVD platter.



The licensing agreements are 10-year renewable contracts. They will include the right to use the Blu-ray format and logo along with the content protection specifications. Licenses for the format and logo will range from around Rs 10 lakh to Rs 30 lakh depending on the products manufacturers want to develop. The protec-

tion specifications range in price annually from Rs 2 lakh to Rs 6 lakh.

Companies are already manufacturing products based on the new technology. Philips demonstrated a prototype Blu-ray disc drive. It uses a 3 cm disc and stores up to 1 GB of data. Typical CDs, measuring 12 cm in diameter, can hold up to 650 MB of data. The prototype drive demonstrated can be used in portable devices such as digital cameras, handhelds and cellphones.

## Posting messages in mid-air

Dying to make known your view on the last film you saw or the last book you read? If you have your mobile at hand, you may soon be able to post



your views right outside your front door. Researchers the world over are working on ways to create mid-air messaging systems that let you post or read comments that people have left tied to a particular location. The 'mid-air' messages will hang in the air until someone walks past carrying a device, a phone, handheld computer or laptop—any device capable of receiving the messages.

The uses are manifold. Sailors could be informed about the latest hazards or other dangers with the use of mid-air messaging systems. Waterfront tours in New York use mid-air messaging to inform the audience of information at every nook and corner. One of the bigger mid-air messaging projects taking place in Bristol has just received a grant from the government to fund its development.

However, a big problem is identifying the right 'locating system' to use. GPS, which uses signals from satellites, only works well outside and its co-ordinate system is only able to resolve areas down to a few meters in diameter. The other problem is working out which messages to serve up to people as they pass. The software loaded on the devices will have to know about its user's likes and dislikes, so it only gives them a notice of the things they are interested in.

## Master key with 'oracle attack'

A computer security expert at A&T Labs in New Jersey, US, Matt Blaze, has detailed how to make a master key for an entire office building or apartment block using only one sample key and a simple process of trial and error. The applied technique is known as an 'oracle attack'. This is used to quickly shortlist the solutions to a cryptography problem, when some knowledge of the key has been gained.

The technique works with pin-and-tumbler locks for which a master key can be designed to open many different doors. This is the most commonly used type of lock for large buildings. An attacker needs only one sample key, access to its lock and a bag of blank keys ready for cutting. Pin-and-tumbler locks only open when a key has elevated all the pins inside the mechanism to their correct positions.

A normal lock with five

pins can have around a million different pin configurations. However, locks for which there is a master key have two sets of correct pin positions. The first is unique to each individual lock; the second works with the master key and is the same for every lock. In a document submitted to the journal *IEEE Security and Privacy*, Blaze shows that it is possible to work out the master key posi-

tions in a relatively short amount of time using the method of trial and error.

Locksmiths say that they are well aware of the trick. But Blaze says he is the first to set out a mathematical theory underpinning it in detail.

Even though it is technically simple and could be used by criminals, he argues it is necessary to publicise the loophole. Blaze says many professional security consultants are unaware of the exploit and need to be told.



## quoteworthy

"We still strongly believe that digital copyrights should be protected, but mandating a tax is not the right solution"

Chuck Mulloy, spokesman for Intel, on the recent proposal in Germany that PC makers pay copyright holders a 'copyright tax' of 12 Euros for every system sold to compensate for the unauthorised copying of digital movies and other copyrighted material.

"I had one item on my agenda: not to lose. I decided it would be wiser to stop playing"

Garry Kasparov, international chess grandmaster, after he accepted a draw in a six-game chess contest against Deep Junior, the supercomputer that won last year's world computer chess championship. Deep Junior can process 3 million moves in a second and chooses strategy over just capturing pieces.

## tomorrow's technology

### Mind the chip

In what may be the most advanced project of its kind, researchers at Infineon Technologies ([www.infineon.com](http://www.infineon.com)) and the Max Planck Institute (<http://www.mpi.nl/world/index.html>) have succeeded in getting actual communication between live brain cells and a tiny solid state semiconductor.

Here is where the neurological monitoring of tomorrow comes in: a tiny 1 square

millimeter chip containing some 16,364 sensors that detect the faint pulses given out by neurons.

The weak electrical impulses emitted by neurons are amplified and transferred over to a computer for processing. With highly sensitive sensors in place, neurobiologists can analyse how associated groups of neurons or individual cells respond to electrical stimulation or spe-

cific substances over a defined period of time. The tissue and the chip are dipped into an electrolytic nutrient fluid that keeps the cells alive.

The neuro-chip lets scientists understand the neurobiological and neurochemical functioning of nerve tissue over a sustained period of time. It is mainly used in the research of cures for diseases of the brain, such as Alzheimer's disease.



The call of the Kiwis

Hello,  
I am currently doing my Master of Computing from the Unitec Institute of Technology, Auckland, New Zealand. I have been searching high and dry for local computer magazines but can't seem to find anything worthwhile. In my opinion, the best technology publications that I have ever seen have been the ones churned out by Jasubhai Digital Media and I rate Digit as the best computer magazine. I would like to know if you are planning to launch Digit in New Zealand.

Avinash Shridhar  
Via e-mail



Cover up

Hi Vinit,  
I'm infatuated by your September 2002 cover model, Raksha Kapoor. I've spent the last five months searching for some more information, but I've been totally unlucky so far. Can you kindly tell me where can I get more pictures of her? Also give me her e-mail address and let me know if she has a fan club.

Raksha's greatest fan,  
Pinbar  
Via e-mail

Hello Avinash,  
Your uninhibited passion for Digit is refreshing, but currently we have no plans of launching Digit in New Zealand. In the meanwhile, you can always consider ordering an international subscription, which will ensure that you don't miss even a single issue of the "best computer magazine".  
PS: Our publisher has been walking with a swagger ever since he received your e-mail!

AAC mangta hai

Dear Vinit,  
Being an ardent fan of the AAC audio codec, I was surprised that you opted to provide a commercial trial of dBpowerAMP Music Converter on your February 2003 CDs when you could have included a free alternative such as PsyTELDrop. This lapse on your part would have definitely put off many first time AAC users. As for AAC, the only thing that is preventing me from switching over permanently to this excellent codec is the lack of support in portable MP3 players such as the Creative Nomad Jukebox.

Keith Sebastian  
Via e-mail

Dear Keith,  
Sure PsyTELDrop is free, but its interface is not as user-friendly as that of dBpower AMP and it's not as generous in the audio formats that it supports. The only sore point with our recommendation is that it needs the Powertools package, a shareware, for the AAC front end. Hardware support for AAC is improving: check out the Panasonic SV-SD50 that was featured in the Droolmaal section of the same issue.

Send them in people!

Hi Vinit,  
I would like to say that your Backbyte section in the February 2003 issue consisted of more contributions from the Net and less from the readers. I think Backbyte is a reader's section where they can post their run-ins with the 'lighter side of computing'. I had submitted a picture for the Backbyte section and it did not appear. I do not understand this.

Anshuk Kumar  
Via e-mail

Hi Anshuk,  
You are absolutely right. Backbyte was never intended as a whiteboard for us—the editorial team—to pin up our favourite tech jokes that we wanted to share with the readers. I would apologise unconditionally for this goof. Do keep those contributions coming in so that Backbyte continues to be one of the first sections most readers turn to.

digit READERPOLLS

Q. Would you like more game reviews in Off the Shelf, instead of the game feature in Arcade?

Game reviews	Tips & Tactics	Game feature
53%	9%	38%

No problemo! Expect to see more game reviews in the next issue.

Your vote counts

This month's question:

Are you satisfied with the current packaging of Digit?

Log on to [www.thinkdigit.com](http://www.thinkdigit.com) and vote on it

## First amongst equals

Dear Vinit,

As a subscriber of Digit, I would like to know why new subscribers get two great CDs free while the older subscribers do not. Please tell me the reason and also if us older readers can obtain them at a discounted price.

Siddharth Bose

Via e-mail



Dear Vinit,

I had subscribed to Digit, accepting the monsoon sale offer in the December 2002 issue. But your January issue offered a similar deal with two free CDs thrown in. I feel cheated, as will all those who subscribed to Digit in the month of December. This was not expected from a magazine of your reputation.

Umashankar Jamdagney

Via e-mail

## Platform Shoos

Dear Vinit,

Thanks for February's excellent and comprehensive testing of the various processors and motherboards available in the Indian market. However, the Best Value Award winners in the processor and motherboard categories aren't mutually compatible. It will be helpful for many readers like me, if the Digit Team could have listed compatible PC components so as to enable us to build a complete PC.

R. Ganesan

Via e-mail

digit

Dear Ganesan,

The idea behind the test was that a reader would first identify the task that he/she needed to perform, and then choose the recommended solution from within each application area. As you've correctly pointed out, the Best Value winners in the Motherboard and Processor categories aren't compatible, but they represent the best buying choices for those looking at only a specific component (that is, either a CPU or a motherboard). To reiterate, if you're looking to make a purchase decision for a complete PC platform, identify your frequent tasks and then look for our recommendations within the appropriate application area writeups.

## This is how we do it

Dear Digit,

I am working for a recording studio and hope to make an interactive promotional CD for my organisation just like your Mindware and Playware CDs. Please provide me with more details on the applications and tools that you guys use.

Sandeep S.

Via e-mail

digit

Hi Sandeep,

Here is the masala straight from the horse's mouth...err...Multimedia team: "We use Macromedia Dreamweaver for the HTML layouts while the interface for browsing the CDs is made using Macromedia Director."

Please be aware that you'd also need a specialised team of multimedia professionals in the form of a Graphics Designer (who decides the look and feel of the CD), an Information Designer (who decides the content structure, navigation and interface) and a Programmer (who writes the scripts that ties everything together), not to mention a team of content specialists (who generate/identify the content).

## The Force is missed

Hi Vinit,

Your February 2003 issue was great. It gave us a lot of information on the motherboard and processor market in India. However, one thing that was shocking was the omission of the latest nForce2 chipset for motherboards that support AMD's processor lineup. Is the chipset not worth reviewing or will it be reviewed in the future?

Sundeep, StarNet Computers, Belgaum

Via e-mail

digit

Hi Sundeep,

The nForce2 chipset from nVidia is a relatively new kid on the block and as such we could not get a suitable motherboard to test it. Rest assured that we will put such a solution under the microscope as soon as we can get our busy little hands on one.

## Short Bytes

### Dis content?

Vinit,

Do you have a mailing list, which can inform me of the contents of the next month's CDs so that I may selectively buy the issues that interest me?

Abhay Dang

Via e-mail

Selectively buy Digit? Don't tell me you need to justify your purchase of India's leading technology magazine! In any case, you can check [www.thinkdigit.com](http://www.thinkdigit.com) at the beginning of every month. We update the site with all the information within the current issue and the accompanying CDs.

### Operation compatibility

Hey Vinit,

I wish that you will start mentioning whether the software on the CDs is compatible with all versions of Windows.

Kashyap

Via e-mail

Now what was that old phrase? Ah yes, "Your wish is our command!"

### It's in the dictionary. Honest.

Dear Vinit,

The February 2003 issue was TRILLIANT (superlative for brilliant)!

Pulkit Gupta

Via e-mail

### A test of the times

The comparison test in the February 2003 issue was superb. I especially liked the recommended solution which actually helps us pick the right combination of motherboard and processor. Please make sure that the graphics card comparison covers an equally vast range of cards.

Nishant

Via e-mail

You got it Nishant. A comprehensive video card roundup waits on page 42!

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](mailto:readersletters@jasubhai.com)



# Talk to me, sensibly



Leslie D'Monte  
Managing Editor, Digit

**P**RL PCME...and so on. 'Parents are listening, please call me later' for the initiated. For the rest, it's plain gibberish. SMS is sprouting up a whole new language. The hearing impaired, for instance, find it very handy. The text is short and understood even by those not used to the English language. And since most mobiles can be set on the vibrator mode, the hearing impaired get alerted when there's a message.

There are no boundaries to the development of this language. It will never stop, given its popularity and usage. There are no grammar or spelling rules and there is no such thing as a mistake. There are only suggestions. You can use letters or numbers to

valuable exam tips. SMS is undoubtedly a great asset.

But there are problems too. There's a danger of the means to an end becoming an end in itself if not used in moderation. SMS is being misused by terrorist groups. We all are spammed by chain messages. And now there are also reports that the standard of written English is getting sloppy among students due to the overwhelming popularity of SMS. Students in Singapore have been increasingly using SMS-style English in their class assignments. For instance, some students now spell the word 'before' as 'b4', 'night' as 'nite' and 'with' as 'wif'. Teachers are concerned that the efforts to promote the use of good English are 'being undone by SMS'.

Now SMS is the 'n thing', but shouldn't we observe a language protocol? To get to the Net, you have to follow TCP/IP—a protocol. Real life rules are no different. Like, would you ever strut into a discotheque in a formal suit? Or would you walk in for an interview with a bank in half pants? Obviously not! You will feel out of place or made to feel unwanted. It makes tremendous sense to send a quick SMS to your friend. He understands your lingo so your acronyms gel with him. But try sending your resume in SMS, especially if you're applying for a copydesk or writer's position (you will be surprised that employers do get such resumes). Your resume will be in the trash can. Your potential employer will be grr and you will be :-)

The issue is not about whether the English language gets corrupted or not. The US changed the rules of the game with their spellings. Language has to keep on evolving but all communication has a purpose—to be understood. What's the point of sending an SMS in an abbreviated form if the other person does not understand the message? Besides, there is the hsp (highly sensitive person) who might take offence. So the next time you SMS, make sure the language is tailored to suit your audience. If the SMS lingo becomes the dominant language, you can have the LL (last laugh). Till then, FTR and hand (follow the rules and have a nice day). ■

// Would you ever strut into a discotheque in a formal suit? Or would you walk in for an interview with a bank in half pants? //

complete words or instead of words—u = you, l8r = later, 4 = for. The idea is to make words as short as possible—wd = would, mor = more, etc.

Now there are over 11 million cellular subscribers in India. In all probability, you and I use a cellphone. And all of us do use the SMS facility extensively. SMS has become so popular among executives, housewives and youngsters alike, that 18 lakh SMS messages have been recorded between major cellular phone operators every day.

About 3 lakh SMS were sent and more than 22,000 customers dialled and registered for news alerts as soon as they heard about Warne renouncing 'cricket's greatest show on earth'. Acknowledging the fact that text messaging is one of the most popular methods of communication among youngsters, group SMS is being used in some schools abroad to give the students some



# A school of thought

By the masses, for the masses: we take a look at a technology that promises to democratise computing

In India, as in most parts of the world, computers are a significant investment for ordinary people. One that involves bargain hunts for the cheapest hardware that money can buy and a muted exchange of illicit software that money need not. From the collective mind of technology pioneers around the world has emerged a concept that promises to change the landscape of computing. From something that only a handful of people, blessedly within a particular income bracket can make use of, computing hopes to achieve a utilitarian status—becoming as ubiquitous as electricity. Such is the promise of grid computing: a delivery system of computer resources much similar to an electric outlet. Just throw a switch and get instant, hassle-free access to computer power. Cheap too.

## Come together

To better understand this concept, we need to take a closer look at the analogy of an electric power grid. Such a grid gathers current from resources that range from hydroelectric dams to nuclear reactors. Then using a vast network of cables, capacitors and transformers, it distributes the gathered power to homes and institutes geographically distant. Similarly, a computing grid will gather geographically distributed resources of CPU power, storage capacities, network bandwidth, printers, people and instruments and offer the collective under a singular, OS-independent banner to

those who need it. There is strength in unity, computers subscribe to this law as well. Multiple heads performing a task are much better than one—connect two computers and the resultant power increases. Imagine connecting supercomputers in such a way, or connecting the millions of desktop computers that are equivalent in performance to a supercomputer of yesteryear. The computing power thus unleashed could be of staggering proportions. All you would need to do is plug into this hive of unified strength and draw transparently upon resources hitherto out of your reach.

Now that we have a logical structure of a grid in mind, let us take a brief look at what makes such a network tick. A grid is a peer-to-peer network comprising four layers. The lowest rung or layer 1 is the heart of the unit. Called the Fabric, it comprises physical devices and resources that will be shared across the network—CPUs, storage devices, bandwidth, applications and peripherals, to name a few. Above lies layer 2, the Connectivity and Resource chunk comprising communication and

authentication protocols that allow sharing of data and resources from layer 1. The Collective layer or layer 3 consists of services and APIs that allow transparent interaction between resources. Finally, user applications form the topmost layer 4. Just as a Web browser can access data from the WWW via a defined set of standards and protocols, so will applications sitting on this layer make use of underlying structures to access the resources of layer 1.

As an example, consider that one of your applications (sitting on layer 4) wishes access to a database (sitting on layer 1) over a grid. It would first establish its credentials for a secure connection via the

GRAPHIC DESIGN: Atul Deshmukh



authentication protocols of layer 2. It would then find out the location and availability of the required resource via the collective layer of APIs that is layer 3. Next, it would ask for an exchange of data between networks or computers (remember that a grid is a collective) via the Resource protocols of layer 2. Finally, your program would monitor the progress of initiated transaction, pointing out success or failure as appropriate, via the Resource protocols.

tein folding. Proteins are the building blocks of life; they define us via chromosomes and defend us via antibodies, performing every function in between. Diseases such as Alzheimer's and cancer are linked to proteins and their property of folding: a means to align selves into a functional unit. To understand this mysterious process, simulations are run on computers. Protein folding used to take 20 months to simulate. Thanks now to grid-crunching numbers over supercomputers thrown across borders, it can be done in a day, at 1 trillion operations per second. The Human Genome Project, an undeniable task of gargantuan data shuffling, required 500 million trillion sequence comparisons. Such a feat would not have been possible without the advanced computational infrastructure that a grid delivers.

CERN's European Laboratory for Particle Physics in Switzerland expects to produce several petabytes of data each year (think 20 million, four-drawer filing cabinets full of text and you are thinking in petabytes). Running through this mass of digits would require computing power greater than 20 teraFLOPS—IBM's ASCI White hardly touches the 12 teraFLOPS mark. Clearly, joint computational power is called for and CERN is looking for a grid solution to its dilemma.

For the scientific community, a grid allows access to greater computing power and faster networks, which presents an environment for better sharing of data across borders, thus allowing for better co-operation. A grid-enabled earthquake simulator hopes to divide the task between nations across continents: while one laboratory will use its supercomputer to analyse stress caused on the foundation of a quake-hit bridge, another located miles away would simultaneously concentrate on the effects that the

rest of the structure show; effectively reducing the total time for a complete analysis by a huge factor.

### Cheaper than the whole

When terrorist strikes and clandestine security hacks factor in a need for greater data access and redundancy, a distributed network becomes an ideal choice. A national government can share vital data on terror groups between states and its policing authorities. Moreover, thanks to a non-central, peer-to-peer network, even if a section of such a grid is made useless, other parts can chip in and balance the load to assure continuity of service. Such a data exchange need not be limited to intelligence; it could also be used effectively to impart greater transparency to bureaucracy and governance. The dream of that elusive global village has to materialise with the advent of computing resources to our physical villages, bridging the divide with low-cost distributed networks. Finally, for cash-strapped governments that cannot afford singular supercomputers to simulate ecological or military experiments, distributed computing offers equivalent processing power at a much lesser cost.

Indeed, cost benefits have attracted multinational corporations to grid. Although less than 1 per cent of companies are using grid computing today, the number is expected to grow to 10 per cent by 2005 when large companies with more than 10,000 employees will take a 40 per cent chunk of the grid pie. The corporate community needs a homogeneous, business-to-business, data-rich environment to conduct commerce. It has to leverage existing resources and delay the need to purchase new infrastructure. A company with 600 grid-enabled desktop PCs can utilise all of them together as one computational platform, providing it with enough juice to tackle the world's 49th largest supercomputer.

Take the case of GlobeXplorer, a company that delivers imagery from satellites and aerial photography over the Internet and other media. It has used distributed computing to great effect: to reduce its image processing time from 1 terabyte a month to 1 terabyte a week by scavenging spare compute cycles from its workstations and servers.

**Info** The world's fastest supercomputer, the IBM ASCI White, is rated at 12 TeraFLOPS and costs about \$110 million. Thanks to grid computing, SETI@home gets about 15 TeraFLOPS on an average and costs about \$500,000 to date

### Greater than its parts

At this point in time the concept of grid computing is emerging from the labs of universities and government institutions, looking for a commercial helping hand that would allow it to reach a mass audience in a manner that the Internet did.

The scientific community has a voracious appetite for computational resources. Too much is never enough for those who trade data in terabytes on a daily basis. The work involved calls for no other solution but a distributed grid.

Take for instance, trying to understand the complexities involved in pro-



Other companies find favour within a grid network. When Ford Motors was in the market for an affordable solution to simulate car chassis behaviour, Sun Microsystems pitched in, with Gridware in tow. Gridware, a German company, now acquired by Sun, made software that tied desktop computers into a mini-grid, able to perform like a supercomputer. The solution saved Ford \$100 million and success thus spawned, encouraged the motor company to use the same solution to design other components.

### Coming soon...

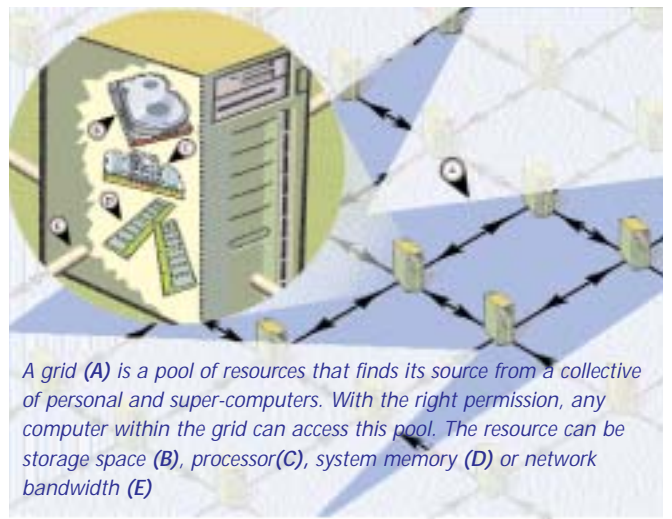
BMW, Boeing and Motorola have also deployed mini-grids as an affordable solution to enable virtual organisations that span nations and yet provide transparent, immediate access to its resources.

To consumers and home users, the trickle down of this technology is minimal. While distributed services such as SETI@Home are here for desktop PCs, they are hardly meant to grant immediate benefits to an end-user. Perhaps Microsoft with its much ballyhooed .NET initiative or IBM spearheading the rival and open-source OGSA (Open Grid Services Architecture, a set of standards and technologies to grid-enable computers using Internet standards already in place) will trigger a wave of grid-ready applications. Already McAfee.com Corp has launched a new

Butterfly Grid is powered by Linux-based IBM machines hosted by Big Blue and connected via efficient fibre-optics. The grid design potentially allows for one million simultaneous players to game together, as opposed to the several thousand that would conventionally fit into one server. The trick is to grid-connect multiple servers then offer a one-point gateway

to the collective for the desktop PCs running a game. The gateway then seamlessly toggles between constituent servers as and when required—to load balance or provide automatic fail-over capability.

The computational horsepower that games demand has fuelled rumours that Sony is looking to a distributed network to leverage the power of the PlayStation 3 (PS3). Grid-enabled (likely with the use of proprietary software), a collection of PS3s will allow for transparent gaming all over the world. The computing resource this will unlock certainly promises titles remarkably realistic in look and feel.



slowly merging into a unified point of view: open-source, community-driven and corporation-backed initiatives such as the Globus project. A further need to tackle issues of security and rights management is urgently felt. Scaglia of Hewlett-Packard has been quoted as saying that the current level of security offered by a grid environment is not acceptable. Perhaps the biggest hurdle is the economic practicality. Grid needs to be largely accepted by organisations with deep pockets. The NSFs, the IBMs and the Microsofts of the world need to take notice. Although the initiative is



It's kind of like the Borg—all the resources become part of the collective, but in a good way

—Tom Hawk on grid computing,  
General Manager of grid computing for IBM



initiative called 'Grid Computing Services' that will use distributed computing techniques to provide real-time, dynamic security against viruses or trojans. McAfee's hub will consist of desktop PCs that will process data coming in from users and generate alerts, updates, fixes and information about security threats—in the form of pop-up windows that will either be routed through proprietary software or through Microsoft's .NET Alerts.

Butterfly.net and IBM have teamed up to offer a middleware solution (a middleware lets you deploy a solution with minimal coding effort) for the online video game industry. MMOGs (Massively Multiplayer Online Games) are a lucrative market, fraught with pitfalls involving maintenance of networks and hundreds of thousands of lines of game code. The

There are other promises that tantalise the home segment. Grid-powered servers would mean more dependable Internet access and better Quality of Service, as such a system load-balances itself. Individuals will have faster computers, greater storage capacities and better bandwidth at their fingertips, at costs affordable to both the rich and the poor alike. Cheap hardware such as handhelds (like the Simputer, theoretically) could tap into the power of a grid to offer experiences exponentially greater than otherwise possible.

### ...right after this commercial break

But there are hurdles. The technology is new and as such there is some uncertainty on the best route to take. A fractured vision of 'how to get there' is

heading towards that goal, the flow of green needs to be much more generous than it currently is. That and co-operation rather than competition, to define overlapping open-source standards and then adopting them remains the key.

We are witnesses to an information overload. Every day massive amounts of data flow helter-skelter, going-a-begging to be structured and analysed, to be made sense of. Hidden beneath this stream could perhaps run cure for diseases: there are 10-100 million species on this planet, 1.7 million are known, and only 50,000 have been studied in any detail. A wealth of knowledge lies at our feet and the limited brain can only look to the tools it has built for a feasible solution. Grid computing then seems the logical step forward. ■

AHMED SHAIKH



### Sony MZ-N1 MD Walkman (MD player) ▶▶ It will rock you!

Sony's new high-speed NetMD Walkman player/recorder allows you to record MP3s or CDs at up to 32x speed from multiple sources (PC, portable CD, home CD unit, radio). It is supplied with a USB cradle for charging and easy PC connection. The device features a three-line Dot Matrix LCD display, up to 110 hours of playback, ATRAC3 playback and support for multiple Internet audio formats (MP3, WMA, WAV). This recorder utilises affordable MD Media for over 5 hours of music storage on one 80-minute disc.

Web site: [www.sony.com](http://www.sony.com)



# Objects of desire

The final destination  
to indulge your fetish  
for funky devices



### ◀◀ ADS USB 2.0 Turbo Web cam Picture perfect

Here's an easy way to video conference, video chat and e-mail snap shots to family and friends. The USB 2.0 Turbo Web cam offers you the high bandwidth of USB 2.0 technology, which enables clear, smooth video over the Internet. It features a 640x480 resolution at 30 frames per second, high-quality lens for crystal clear video, an adjustable desktop tripod and a SnapShot button for still image capture. Also bundled are video conferencing and editing applications. It allows you to chat and video conference with up to five people in real time! Here's to sharing special moments with far-flung family members and friends.

Web site: <http://www.adstech.com/media/mediapdtimg.asp>



## **Bose Triport headphones ►►** **The right tone**

If you think a headphone just cannot give you good sound, stylish design and a comfortable fit all in one package, then it's time you took a close look at Bose Triport headphones. This pair gives you deep, full bass. At the same time, the design is small and lightweight. Soft ear cushions gently fit around your ears to create a comfortable, portable experience. The thin, adjustable headband has several easy settings and the ear cups swivel for added convenience. No more do you need to compromise the quality of your favourite music just because you're listening through a pair of headphones!

*Web site:* <http://www.bose.com/products/headphones/triport/>

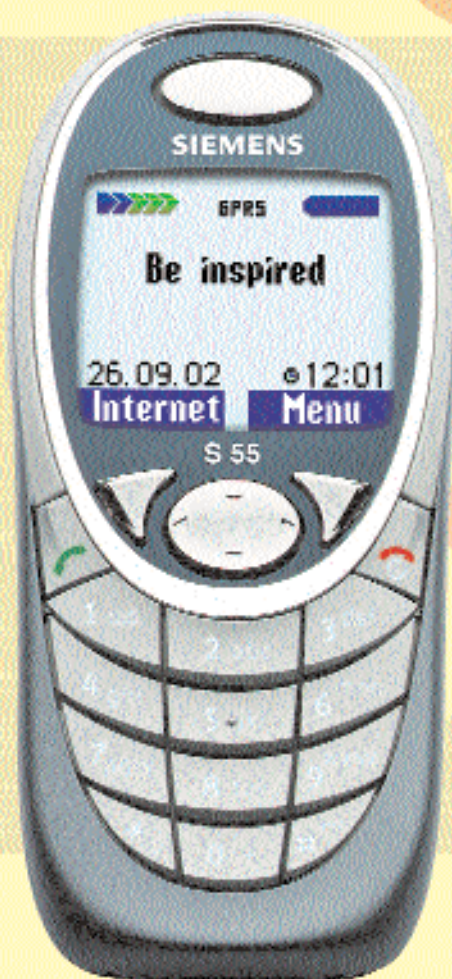


## **◀◀ Siemens S 55** **A splash of blue**

SMS, EMS, MMS, e-mail, Bluetooth, GPRS class 10, WAP 1.2.1, integrated hands-free and voice dial/command, currency converter and world clock—this phone has it all. EMS allows you to send extra long texts, icons, animations and even melodies. The e-mail client supports SMTP, POP3, IMAP4. Besides, with triband technology, you can call from almost anywhere in the world. An attachable camera with an integrated flash can be purchased separately for taking images and sharing them using MMS. The graphic colour display shows up to seven lines and has a visible area of 33x29 mm, while its Lithium Ion battery offers about 300 hours standby/6 hours talk time.

The S 55 also includes Java to enable you to download applications as well as games. The S 55 automatically synchronises contacts, business and social schedules wirelessly with PCs and PDAs.

*Web site:* [www.my-siemens.com](http://www.my-siemens.com)



## **Fujifilm FinePix F401 Digital Camera ►►** **Capture the world**

The FinePix F401 integrates full digital multimedia video and sound with a 2.1 Megapixel Super CCD, capable of producing a maximum image file size of 4 million pixels. Also, the CCD system can yield 1600 ISO at 1 Megapixel with minimal electronic noise, higher shutter speeds and extraordinary performance. An optional cradle helps charge the Lithium Ion battery and acts as a simple USB computer docking station or base for PC-Cam video conferencing.

*Web site:* [www.fujifilm.com](http://www.fujifilm.com)





# METAL at Work

GRAPHIC DESIGN: Anil Deshmukh

**3** billion human lives ended on August 29th, 1997. The survivors of the nuclear fire called the war Judgment Day. They lived only to face a new nightmare, the war against the Machines...

*A metal foot crushes the skull like china.*

*TILT UP, revealing a humanoid machine holding a massive battle rifle.*

*It is the endoskeleton of a Series 800 terminator. Its glowing red eyes compassionlessly sweep the dead terrain, hunting.*

*--Terminator 2: Judgement Day*

This was the future. They all told us so—Asimov and Cameron—our home was going to be dominated by metalmen. And if we weren't careful, they would stop serving us coffee and toast, and take over the world. But the future is already here and instead of menacing cold wires, and exoskeletons with laser eyes, we have metal canines going into a frenzy over a plastic ball. Much as our soothsayers would like to make us believe, robots are used for more menial labour than world domination—tasks unglamorous enough to restrict their menacing frame to a giant limb with enough mobility to pick up and place components of a car frame firmly in place.

The beauty of robotics is that it brings together different disciplines such as mechanical engineering, electronics, digital electronics, communication, computer science, algorithms and chemical engineering. And it also diversifies into other

areas such as Artificial Intelligence, a prime driver for the future robotics and Hollywood movies alike.

Robots are more used in the industry scenario to increase precision or productivity. The humble industrial robot is a tool used to do routine and tedious jobs, where human accuracy suffers over a period of time. The typical working day for an industry robot involves welding, assembly, spray painting and replacing the nuclear fuel rods in nuclear power plants—jobs that are too monotonous or harmful for human beings. While industrial robots are a widespread norm in countries such as Japan, Russia, Germany, the United States and China, they haven't been able to catch up too quickly in India for reasons financial and human. Which is not to say that they aren't here at all—robots do thrive in the clinical environment of the mechanical laboratories of our engineering universities. But will they come out to butter our toast?

## Still in school

C. Amarnath, teaching in the mechanical engineering department of IIT, Mumbai, has worked on the nine-year project, Natraj, along with Isaac Kurien and the students of mechanical engineering. The Natraj is a walking robot built using completely indigenous components. The development of the Natraj is funded by the Bhabha Atomic Research Centre

(BARC) which aims to use it in its nuclear plants for hazardous operations. So what's so special about it? Amarnath explains: "The Natraj is a walking machine and it is fairly more difficult to define its moves. For a robot to walk, we have to study the human sense of balance and movement very closely and try to emulate it in the mechanism. It has to learn to work with gravity and balance itself while moving its feet." Kurien agrees: "Although all of us walk, it's hard to define it for a machine. They don't have a sense of balance and tend to overturn."

Making a robot walk takes it to a higher level of mechanical intelligence and gives it mobility. This, in turn, makes it applicable to more areas of work. It can now navigate itself around to do the prescribed task. As Subir Saha, associate professor in IIT, Delhi, and an ardent champion of industrial robotics in India says, "In the Indian way of life, drudgery and life hazardous jobs are the norm. Anyone exposed to nuclear, radiation or working in steel factories faces occupational danger. In a scenario like this, there is no reason why robotics should not be applied for the welfare of the human workers."

And what is the future workday of the Natraj going to be like? According to Kurien, "With the Natraj, we've tried to prove, using indigenous technology, that machines can walk. The next step would be to make it more intelligent using





sensors such as cameras and input sensors, which will help it make its own decisions. It will be able to do much more than what it can do with the existing sensors. Right now, it has internal sensors, which means that the feet move the way we program them to. This is the lowest level feedback."

So does this mean that the Terminator will have six legs and look like a spider, instead of Mr America? Or to be more precise, will we be able to make a mobile robot that takes stock of the obstacles in its course and maps out a path to perform its task, or is pre-programmed? "It's both actually," explains Kurien. "The Natraj is fully pre-programmed. The next step is to make robots that work on simple operator commands such as 'go from this point to that point'. While currently we spoon-feed a robot on what has to be done at each point, by then the robot will be equipped to encounter the obstacles placed in its path because they will be fed into the memory and it will react as instructed. This will require more sensors, the ability to recognise the senses, classify them and to make

intelligent use of them."

So are robo sapiens just being put to use where no good homo sapiens should go? Not really. Other jobs require an intelligent and observant metal head with a scientific background. The National Institute of Oceanography, Goa, is developing Maya, an Autonomous Underwater Vehicle (AUV) which has a bright future. Elgar de Sa, a scientist with the institute, works on the Maya. "The visions we have is several Mayas prodding the ocean floor, connecting to each other and making discoveries. We're interested more in discovery—we want to know what's happening under the ocean. It's so vast, we can't know enough using just ships," he says.

AUVs are being built in other parts of the world such as Europe and the United States. However, their main focus remains surveying the ocean. The Maya is a low-cost, small, but intelligent AUV. "In place



Prof Isaac Kurien,  
PROFESSOR, IIT MUMBAI

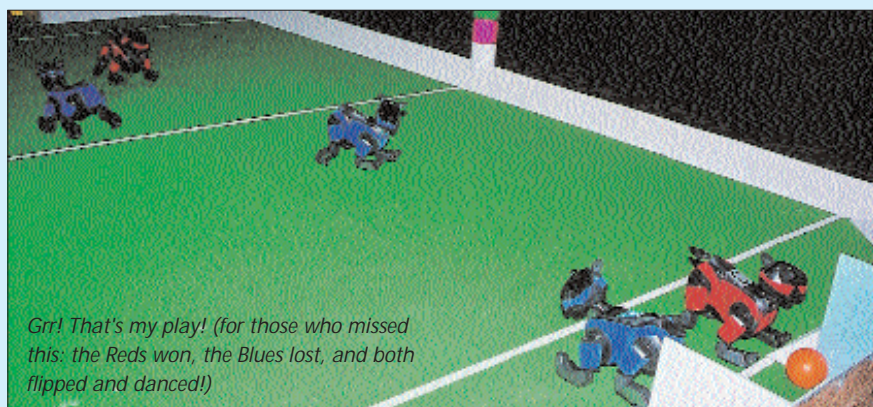
“ The intelligence of a robot is measured by how autonomous it is ”

right now are a few systems that are huge and require sophisticated launch capabilities and sophisticated sensors. We are not looking at these systems. What we're looking at is small AUVs that are very intelligent and highly manoeuvrable. Their low cost makes them affordable to be replicated in the future," explains de Sa. The Maya is approximately 1.5 metres in length, 1.3 metres in diameter and runs using a single motor. It can dive to a depth of 300 metres and has a range of about 30 km. The sensors used will have to be state-of-the-art and hence will have to be imported, but a lot of the hardware

## Yantriki

Yantriki is the annual robotics festival that is organised by IIT Mumbai. The brain-child of C. Amarnath, the Dean of Students Affairs, Yantriki has built up a legendary reputation of attracting the best amateur teams in the country to pit their robotic skills against each other. This year was no exception; from January 31 to February 2, teams from all over the country jumped in to take a chance at winning the top honours. Yantriki also coincides with Techfest, IIT Mumbai's annual technology festival, and the resulting carnival makes this the most fun technology event.

The competition is made up of three



rounds, with increasing levels of complexity and automation. At Level 1, the competition involved a game board with a folded napkin in the centre. Two robots come in from either end, cross an obstacle and place

themselves near the napkin, pick it up, and scoot right back to their home. The fastest one to do this is the winner. At Level 2, the bots fight it out over table tennis. Each bot gets 10 seconds to pick up the ball and throw it back across the net. Lose out on the time frame and the opposing bot wins a point. In Level 3, the bots enter a maze and negotiate their

way out. Sounds easy? Hold on then. Here the mouse-bot is entirely autonomous—no humans can control or intervene to help out the mouse!

The bots came with tiny electrical motors, belts, wires, toggle switches, tape and aluminium foil and just about anything that could be mounted on it; one bot, for example, used a fan to whisk up the ping pong ball in the Level 2 competition. The aggressive little bots came with names such as The Titans, Sharp Shooters, Jaws, Snatcher and Balbeer Pasha. In the ensuing war, bots did break down, and there was help at hand with IIT Mumbai's Robotics Lab providing a full-fledged emergency room.

And then came the final competition





and software used will be Indian.

So what is little Maya going to be when she grows up? "There are a lot of applications being looked at—surveying the seabed, for under-sea mapping. If we get the right sensors, we can examine the topology of the seabed. Currently, we only use satellites that can only study the surface of the sea." The main task is to increase the ability to collect data in innovative ways. "I believe that if we can get the technology in place, we can have a family of them—small ones, big ones, ones that can dive, that can go horizontally, some that can explore by themselves," sums up de Sa. The battery technology restricts the scientists from keeping Maya underwater long enough to imprint the scenic landscape on its electrodes. In the future, de Sa hopes to use fuel technology that will increase its endurance since weight and power are the crucial factors that will decide its staying capacity.

We have some aspirants for the medical field too and misleadingly, one of them is called the da Vinci. The da Vinci

showdown—and the teams that won top honours included Jaws from Veer Mata Jeejabai Technical Institute (VJT), Mumbai, who came up on top at Level 1, The Titans from IIT Mumbai who triumphed at Level 2, and AI from IIT Kharagpur who won the Level 3 competition. At the Level 2 finals, it was a really close fight between The Titans and their adversary, Balbeer Pasha (also from IIT Mumbai) with both bots playing very hard to win. The winners got to take home cash prizes and Lego Mindstorm kits.



The Ping-Pong Titans from IIT-B, winners of the Level 2 competition

Two students from the Dortmund University, Germany put up a game of robot-soccer with six Sony Aibos. Each Aibo responded to the movement of the ball, and the concept of team play. And what's a mutt to do after winning? Why dance, of course—six puppies danced to their victory, in sync and step with each other!

console employed at the Escorts Heart Institute and Research Centre in Delhi is not known for its bedside manner. What it is known for, however, is aiding doctors during critical heart surgeries. The da Vinci bears close resemblance to its video gaming cousins and is accompanied by a surgical cart with three arms jutting out. The arms need to be assisted to the incisions made on the patient and one of them is fitted with an endoscope that transmits images of the patient's organ onto a colour monitor. The da Vinci recently aided a successful bypass heart surgery. The Escort Centre is currently one of the handful of hospitals to use robots in surgery. It needs to be pointed out here that robots are only used to assist qualified doctors; they do not perform the surgery by themselves.

The robot brings a lot of advantages to the operation table—it does away with the foot-long incisions needed in conventional open-heart surgery by using a smaller incision and displays the heart as a three-dimensional image, magnified 10 times its natural size to give clarity. It also takes over the function of artificially pumping the blood while the operation is in progress. But its special skill lies in easing performance anxiety—da Vinci deals with surgeon fatigue and hand tremors by providing a stand for the hand and steadying it. However, it will be sometime before da Vinci finds its way into more hearts. Today, the robotic heart surgery costs around Rs 2 lakh and the da Vinci costs Rs 7 crore to import. Industry experts expect the costs to come down in the next five years when the components and technology involved will be cheaper. It will also be cheaper for the patient, since the recuperation time spent in the hospital can get as short as three days.

### In the real world

All the budding technologies have been late for their date with the subcontinent compared to their counterparts in Europe, the United States and Japan. These nations have been using robots for some time now. The primary hindrance is that robots have traditionally been looked upon as replace-

ments for human labour. "The main reason for the arrested growth of robotics in India," explains Amarnath, "is that most western countries use robots as an alternative for their expensive human labour. Another reason is that the components used to make these robots were not available in India till late."

So what makes them ready for the tropical subcontinental weather now? "The key," says Amarnath, "is to adapt robots to our economic scenario. We cannot use robots to reduce human labour.



Prof Subir Saha  
ASSOCIATE PROFESSOR  
IIT, DELHI

// A published statistic shows that 3,50,000 robots account for less than 3 per cent unemployment in Japan //

Instead, we must use it as a tool and to increase productivity and precision." Saha agrees: "We must use robotics since we are competing with countries such as the United States, China, Russia and Japan. It has been proved that precision cannot be achieved by manual labour."

Robots can also be used to increase productivity. In an industry such as carpet cleaning, a worker is paid by the number of carpets he or she cleans. Here, an automated tool increases the efficiency and does not replace the worker. Many industry experts feel that we should study the robots being used abroad and adapt and produce them indigenously. This will lower their costs, making them more accessible to companies.

The answer to the question that will judgement day ever be brought upon by machines, depends on their intelligence. The intelligence of a robot is measured by how autonomous it is. The definition of robots itself establishes that it has to be programmed to perform a task. Hence, the intelligence behind it will always be human. How well it performs the task and how easily it overcomes the obstacles it faces, will determine the intelligence of the machine. So while we may not yet have robots using us as batteries to power themselves, there is a possibility of them cleaning our carpets. ■

MITALI PAREKH and SRINIVASAN RAMAKRISHNAN

# 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.



## 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!

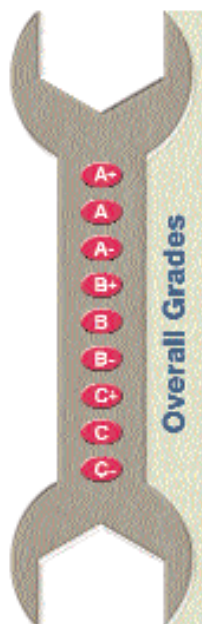
## Comparison Tests

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.



## The 5-point Rating System used in Bazaar

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

## In Test this Month

Our feature test this month presents a fresh perspective into the video card market in India. Some of the developments promise to surprise you. Read the comprehensive story wherein we test 36 AGP graphics cards to find out



how there are solutions meant for everyone—affordable and feature-rich. Cards based on chipsets from nVidia, ATI, Matrox and Trident are suitably dissected and analysed, helping you to make the right decision; be it for purchasing a card for casual gaming or for enjoying the latest games at the best visual settings. What's more, an additional treat for all you computer gamers comes in the form of an extensive testing of the best gaming peripherals. There are 24 devices in the reckoning: be it a joystick, a gamepad, or a racing wheel—with or without force feedback—we have them all lined up for your perusal. Next up we have the Bazaar section buzzing

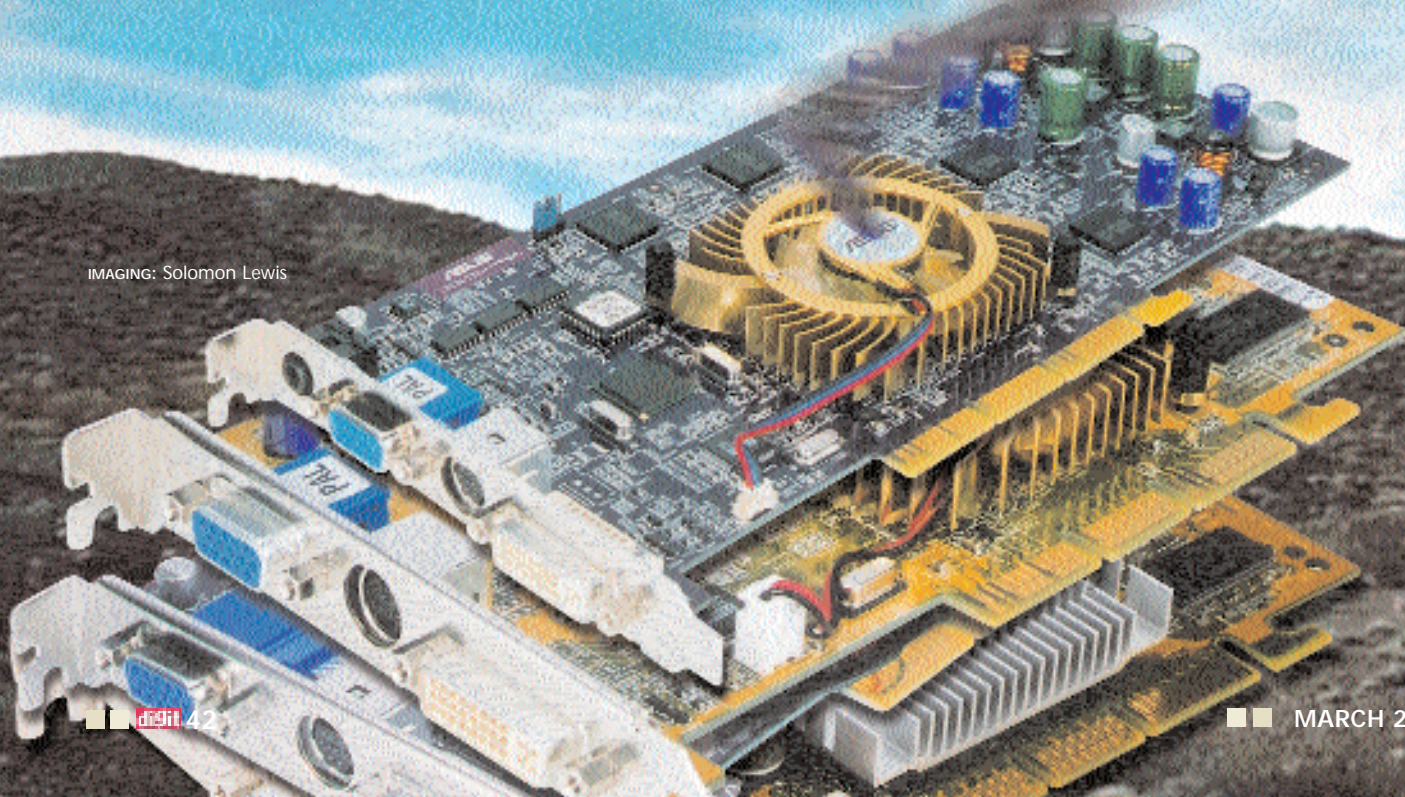


with myriad products. A Dell personal computer that packs quite a punch within an ultra small form factor, a Canon Digital 2 Megapixel camera, Creative's latest 6.1 speaker set and a scanner from Epson are just a few of the goodies tested.



# VIDEO STARS

IMAGING: Solomon Lewis







Just when you thought the graphics card makers couldn't pack in more technology into their products, another card comes along that pushes the bar just a little bit higher. So how do you sift through the MX440s, the 9700 Pros and the Ti4800s to pick one that suits your needs the best? We evaluate the cards in the market and tell you which ones pack the meat and which ones are just fluff.



Which graphics card is the best? The answer is simple: one that gives you optimum performance at the price you can afford. We help you choose the right card whether you are looking for killer effects or plain vanilla gaming

**V**ideo cards cost a bundle. The set of applications that one typically runs does not call for an investment into such hardware. Motherboards are now commonly equipped with an onboard graphics chipset that does an adequate job of satiating the needs of working with an office suite, exchanging e-mail, browsing the Internet, even enjoying the odd game or two. You will thus find that unless you specifically ask otherwise, your local PC assembler will consider it normal, supplying you with a system with an onboard video chipset. The computer market, however, is becoming more attractive and affordable to the masses; this fact is also reflected in the falling prices of video cards, or rather the availability of well performing, pocket-able solutions. For a little over Rs 1,000, you can find yourself a decent piece of hardware that will dedicate itself to painting your monitor with pixels.

But why would you need to invest in such a solution? If you wish to entertain yourself with DVD movies, you need a current breed of video cards that carry hardware decoders that will take the stress off your processor; if you find yourself indulging in more than a weekly session of intense 3D-gaming, well, nothing beats a good frag at 60 frames per second (fps)—something only an AGP card can offer with elan. Even professionals who find their source of income in 3dsmax or a CAD application will be more comfortable powering their 21-inch monitor with something that supports a resolution greater than 1280x1024 with flicker-free refresh rates that exceed 75 Hz. There are cards that support dual-monitors (one of those luxuries that soon becomes a necessity)—the Matrox Parhelia can run three! There are those that can output to a television; talk with your camcorder, exchanging movies; bring you cable television and double as a video recorder, saving your favourite programs on your hard drive, to be enjoyed at your leisure. Applications such as these further emphasise the role of your personal computer as the hub of digital information-exchange and entertainment.

Of all the applications, games come across as a determinant of performance, being at the top of a food chain that constitutes power-hungry applications—if your hardware can run a game, other tasks become a walk in the park. You will thus find that even the lowliest of cards meant for gaming, adequately run CAD applications, or drive a large monitor at a comfortable refresh rate and resolution. As you climb further up the price ladder, you find these cards with features that let you perform the tasks listed above. Thus, at the very top you will find a card similar to the ATI ALL-IN-WONDER 9700 PRO, one that is built around a gaming chipset and offers a TV Tuner, a remote control, the ability to record TV programs or to connect external hardware such as a flat-panel or a camcorder. While the low-end cards are reasonably priced, beginning around Rs 1,000, the high-end monsters exact a price in excess of Rs 20,000. With this in mind, we have tested 35 cards from the leading vendors in the Indian market, evaluating each one for two application areas: casual gaming and high-end gaming. Let us help you choose the right video card for your needs.

## How we tested

Having established the areas of casual gaming and high end gaming on which to evaluate a card, we then defined the areas according to certain resolutions and feature sets. For casual gaming the score split was 60 per cent performance and 40 per cent price, while for high-end gaming the split was 80 per cent performance and 20 per cent price. A card that would perform with satisfaction at 640x480 and 800x600, while being affordable (not greater than Rs 5,000) would be considered ideal for casual gaming. For high-end gaming, we decided to weigh a card based on its performance at resolutions of 1024x768 and 1280x1024, with the logic that cards that cost a bundle should perform accordingly. Furthermore, features such as dual-monitor support, bundled VR glasses, a TV Tuner chip, API compatibility, etc also contributed to the scores of a card for the high-end gaming area.

We tested all the cards on the same set of benchmarks, but awarded them differently based on the resolutions run. With the benchmark scores in hand, we then calculated a Suitability To Task Index (STTI), which was an amalgamation of pure performance and price. We thus have an STTI score for the application area of casual gaming (the higher a card scores, the better suited it is to this task) and an STTI score for high-end gaming (again, the greater a card scores, the more suited it is to the area of high-end gaming). As an example, a card may score 70 STTI for casual gaming and 40 STTI for high-end gaming, making it an ideal buy for the casual gamer but an avoidable investment for someone who demands greater performance at high resolutions, advanced features such as DirectX 8.1/9.0 compliance, etc.

The benchmarks chosen were run at resolutions of 640x480, 800x600, 1024x768 and 1280x1024. Except for 3DMark2001 SE, which was run at 800x600 and 1024x768 resolution. What follows is a list of benchmarks used and the reason for using them. You will notice that all tests, synthetic or real-world, were related to games—if a card copes well with these set of hurdles, you can be sure that any video application you throw at it will be tackled with grace.

Quake III Arena: The venerable OpenGL-based engine still remains an intensive test, especially for cards with older chipsets. The ability of the game engine to scale higher or lower according to the hardware allows us to evaluate the performance of the graphics cards by keeping the rest of the test system the same. Moreover, most of the favourites in the Indian gaming market are derivatives of the *Quake III Arena* engine. The age of *Quake III Arena*, however, led us to delegate more importance to it in the casual gaming area—it got the highest weightage under this sector. For a card's performance under OpenGL for the high-end gaming area we used a newer game, noted below.





Serious Sam: Second Encounter: The *Serious* engine is also based on the OpenGL API, but is a better engine for evaluating the latest cards. Not only does the engine scale well, it also churns out a lot of high-polygon count monsters, stressing a video card to a great degree. As mentioned earlier, this was the game of choice for evaluating a card's OpenGL performance for the high-end gaming area and was thus given a greater weightage in that sector.

Unreal Tournament 2003 Demo (UT 2003): This is the latest *Unreal* engine that we could get our hands on, since *Unreal 2* wasn't released at the time of testing. Suffice to say, the engine is sufficiently advanced so as to put even the fastest of cards through their paces. Vertex shaders, reflective surfaces, bump-maps, high-polygonal enemies and levels—everything mentioned in the Journal of Greater Eye-candy is implemented with great care by this game. This engine was used to evaluate a card's performance under the DirectX API. This benchmark too, gathered greater weightage for the high-end gaming area.

VulpineGL Mark: This is an OpenGL-based synthetic benchmark. It is used to evaluate the potential performance of a card

under advanced features such as hardware texture and lighting, and cube mapping. The test consists of several stressful locales such as a dense forest, reflective water, a high-tech lab with transparencies and lots of light sources and shadows. Such



elements strain a video card, giving an indication of its performance while playing an OpenGL-based game. A final score is displayed in the form of an average fps that a card managed to draw. 3DMark 2001 SE: 3DMark 2001SE fills in the boots of a synthetic test for DirectX evaluation. It incorporates the new features that went into the DirectX 8.1 API. This makes it suitable for evaluating the latest graphics cards that claim to be DirectX8.1 and DirectX9.0 compliant, as it runs tests that use a card's hardware T&L unit, its pixel shader unit, various bump mapping techniques and so on. This benchmark skips the relevant test if a particular feature is not supported by the card—a course that is directly reflected in the unified score which is presented at the end of the test.

3D Quality test: To determine the visual quality offered, we tested the cards under *Quake III Arena* and *UT 2003* with anti-aliasing and anisotropic filtering turned on. The features offer more realistic, cleaner pictures. Screenshots from the two games were judged by a panel of three and points were awarded to each card based on the quality of the shots.

To test the graphics cards, we used a test-bed consisting of a P4 2.8 GHz processor sitting on the Intel 850EMV2 motherboard, with 256 MB RDRAM and a 40 GB ATA/100 hard drive, along with a Samsung Samtron 75E 17-inch monitor. The OS was Windows XP Professional with Service Pack 1. The monitor was set at 1024x768 resolution with 75 Hz refresh rate. Vertical Sync was turned off from the respective drivers so that the frame rate while benchmarking, would not get locked to the limit set by the monitor's refresh rate. For testing the nVidia cards, the latest 41.03 Detonator drivers for XP were used. The ATi cards saw the CATALYST 3.0 driver set loaded on the system. Matrox cards were tested with the drivers that came bundled along.

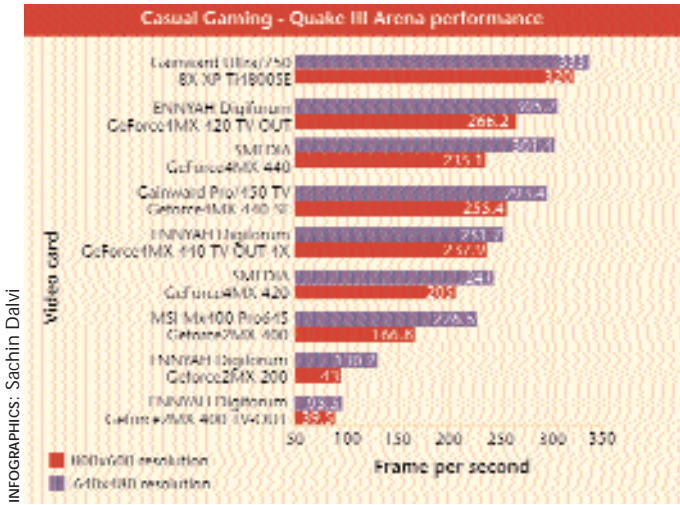
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How they fared

When we talk about graphics cards, the conversation melts down to ATi and nVidia. Solutions from Matrox and Trident, although present, failed to impress us. The latest offering from these companies is nVidia's GeForce 4Ti4800 chipset and the 9700PRO from ATi. However, cards with nVidia's GeForce4MX chipsets dominated the comparison, doing very well in the casual gaming application area and performing not too shabbily in the high-end gaming sector. The reason was simple: a very few games support all the latest features that a card offers—you will often find a lag of six to 12 months between the release of a new API and that of a game that fully utilises it. It is a rule driven by economy of numbers. Thus, a card with a decent feature set and an affordable price comes across as the ideal buy. Since almost all the features of the latest and the fastest nVidia GPU are offered by the GeForce4 MX chipsets and at a relatively lower price, the result was not surprising. The high-scorers within the high-end gaming area were the latest chipsets mentioned above—another result that did not come as a surprise. The point to note, however, is that ATi solutions are now capable of taking the fight to nVidia, both in performance and in price.

Casual gaming

While a definition of a casual gamer will be hard to form, you could consider yourself one of this kind if you find yourself taking in the occasional gaming goodness, with an interest that does not exceed a few minutes. A quick bot-match in *Quake III Arena*, a mission or two in *Medal of Honor: Allied Assault*, a brief tussle with gems in *Bejeweled*, or a frag-session amongst friends in *Counter-Strike* or *Unreal Tournament*. Such activities tend to define you as a casual gamer. A video card suited to your needs will also be more than adequate for other mundane chores of browsing, word-processing, e-mailing, and satisfactorily working with CAD/3D modelling applications. Such a video card need not run the latest games at the highest resolutions and more importantly, should be affordable. No use sinking money into an activity that you only indulge occasionally. Thus, the application area of casual gaming was defined, and benchmarks run at resolutions of 640x480 and 800x600 formed the backbone of the tests for this area. On the features side, we awarded points to a card if it had Video In and Out ports, if it had a fast enough speed, a decent RAMDAC (to support those high resolutions), compliance with gaming APIs, etc. After the relevant scores were thus gathered, we calculated a Suitability to Casual Gaming Index—an STTI score that determined the suc-



cess of a particular card in this application area. The logic was simple: the greater the score, the better the card. We further zoomed in on the ideal solutions area by factoring in price. Thus, all cards that scored above 50 STTI and sold at between Rs 2,500 and Rs 5,000 were considered ideally suited to the application area of casual gaming. Based on this band, we present the following analysis.

The best video cards for Casual Gaming: The ideal frame rate that a video card should offer is around the 60 fps mark. Although the human eye is said to satisfactorily accept a 30 fps rate for moving pictures, the nature of a game calls for a buffer. A game is a dynamic creature, one moment you will be staring at a serene landscape littered with nothing but interesting trees and rocks, only to be suddenly surrounded by ghastrlies that come fattened on polygons and in great numbers. Moments such as these stress a video card, which if it were hitherto running at around the 30 fps marks would now crawl at less than the ideal frame rate, causing visible stutters. Thus, a greater frame rate is always advisable—for the casual gaming area, this rate should fall within the resolutions of 640x480 and 800x600.

Two benchmarks were given greater weightage here, *Quake III Arena* and 3DMark 2001 SE. Video cards from ENNYAH dominated this area of gaming. Decent performances at very low prices elevated them to this status. The ENNYAH DigiForum GeForce2MX 200 posted scores of 130.2 fps at 640x480 and 43 fps at 800x600

10 Steps to Ensure Healthy Viewing

Before opening up the computer cabinet and replacing your old video card with a new one, here are a few things that you need to do:

- STEP 1** Un-install the drivers for the old graphics card from the Add/Remove section of the Control Panel.
- STEP 2** Shut down your computer and open your cabinet. Pull out the cord supplying power to your computer.
- STEP 3** Remove the VGA connector attaching your monitor to your video card.
- STEP 4** Carefully pull out the old graphics card, ensuring that you are electri-

- cally grounded.
- STEP 5** Hunt for the AGP slot: this should be brown in colour and smaller than the similar looking white coloured PCI slots. Though unlikely, the card might be sitting on a PCI slot.
- STEP 6** Insert the new graphics card into this brown slot and screw it in for a comfortable fit.
- STEP 7** Close the cabinet and switch on the computer.
- STEP 8** The new card will be now recognised by Microsoft Windows and the basic VGA drivers will be installed.

- STEP 9** When asked to install the drivers for the card, choose No and continue.
- STEP 10** Insert the driver disk provided by the card manufacturer and continue on-screen instructions to install drivers for the card. Restart machine and there you are. Your new graphics card is ready to boogie. In case your card does not come with driver software, you can download the generic Detonator drivers if your card has an nVidia video chipset (find them online at [www.nvidia.com](http://www.nvidia.com)), the CAT-ALYST drivers if you have an ATi-chipset-based card ([www.ati.com](http://www.ati.com)), or Matrox drivers if so required by your card ([www.matrox.com](http://www.matrox.com)).



## A Recipe for Entertainment

Take a video card with an onboard TV Tuner (such as the ATI ALL IN WONDER 9700 PRO or the COMPRO VideoMate from nVidia, or buy a PCI daughter card from the nearest hardware shop (look to our *Undercover report* on page 82 for further information). Add in coaxial cables to connect the card to your cable provider, throw in a hard disk big enough and spice up the mix with comfy seating, for one or two. There you have it, hot off the stove, a solution that will put your TV and VCR to shame. What you potentially possess is called a personal video recorder (PVR). The theory is simple: tune in to your favourite shows using the TV Tuner, and power up the software supplied alongside the hardware to encode and record the show on your hard disk. PVR also lets you pause a live show, head off for a snack or such, come back and continue watching the show where you left off. What's more, this 'time-shifting' also allows you to skip commercial breaks! All through the wonder of some encoding software and your handy hard drive.

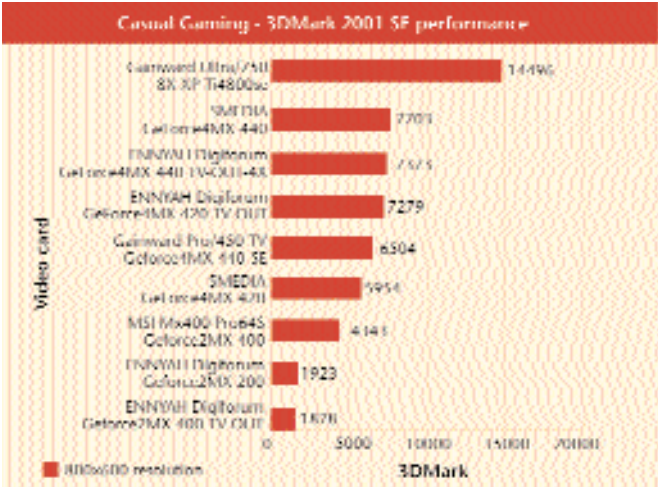
Storage space is a potential bottleneck for PVR application. A movie encoded in MPEG-2 format, at a resolution of 720x480, running for a length of 1 minute with sound will take up half a gigabyte of disk space! This is where video codecs come in. Some of them are proprietary (such as the one supplied with ASUS cards) but all of them aim to alleviate the burden of disk space required to record your favourite shows.

resolution under *Quake III Arena*. As far as 3DMark scores are concerned, a number close to 2,000 should be considered adequate under this application area, while anything close to 5,000 should be looked upon as a good show. The GeForce2MX 200 card showed its age by posting just 1923 3DMarks under the 800x600 resolution—barely adequate. Even under the real-world DirectX test of *UT 2003*, this card did poorly, posting just 21.1 and 15.11 fps. Its OpenGL showing continued to be adequate—even in the newer engine of *Serious Sam*, the card posted above the 30 fps mark: 65.6 fps for 640x480 and 43.7 fps for 800x600. At Rs 1,750, only the MSI Trident T64 is cheaper, but this card beats the performance of the T64 by far. Consider it a buy if you are in the market for an inexpensive deal.

This card's elder sibling, the GeForce2MX 400 TV-OUT, did worse, although it possessed a theoretically greater bandwidth. A TV Out port granted this one a greater cost of Rs 2,750. Competing head-to-head, we found the MSI version of the same chipset in their MSI MX400 Pro64S GeForce2MX 400 card. Although quite a mouthful, the card bettered its rival by far, scoring 226.5 fps as opposed to 95.5 fps in *Quake III Arena* at 640x480 and 4343 3DMarks against the ENNYAH's 1878 score. It also did surprisingly well in the *UT 2003* tests, posting 43.52 fps at 640x480 and 31.28 fps at 800x600 resolution. Its performance comes at a price, however—at Rs 4,300, the card is twice as expensive as the ENNYAH, although its performance certainly reflects that difference.

To buy a GeForce2MX chipset at prices around the Rs 4,000 mark is not very advisable; you should rather opt for the newer and more feature-rich GeForce4MX-based solutions. ENNYAH offers three variants of this chipset: the Digiforum GeForce4MX 420 TV-OUT is based on the 420 chipset, while the Digiforum GeForce4MX 440 TV-OUT-4X/8X are based on the 440 chipset which along with support for AGP 4X/8X, provide greater bandwidth for transferring data between the CPU and video card. The flavours perform to satisfaction, posting scores greater than 200 fps under *Quake III Arena*

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and greater than the 6,500 mark under 3DMark2001 SE. They do similarly well across the board—their performance under *Serious Sam* hardly falls under the 80 fps mark, while even the stressful *UT 2003* never manages to bring them to a level less than the 50 fps level. Consider the GeForce4MX 440-4X and the 420 variants: at Rs 4,500 and Rs 4,750, respectively you can see why it is wiser to invest in one such chipset rather than one based on the GeForce2MX chipset. Cheaper variants of the chipset are on offer by SMEDIA cards—the GeForce4MX 420 and the GeForce4MX 440 by SMEDIA ask for Rs 3,200 and Rs 3,900, respectively. Although the SMEDIA solutions do not perform up to the par set by the ENNYAH cards, the performance married with the prices on offer allow us to consider them as a better buy. A recommendation that is reflected by the STTI score that these cards achieve: 81.80 STTI for the SMEDIA GeForce4MX 420 and 88.68 STTI for the GeForce4MX 440 variant. Judged purely on performance, the Gainward Ultra/750 8X XP Ti4800SE comes across as the leader. Colour it with a price of Rs 18,895, however, and you can see why the SMEDIA cards are the overall winners in this category.

Our recommended solution: SMEDIA GeForce4MX 420

High-end gaming

Although the golden rule of greater than 30 fps still holds for the high-end gaming segment, the landscape changes drastically due to several factors. First amongst them is the resolution—when you find yourself shelling out money in excess of Rs 10,000, your expectations should similarly rise. Thus, frame rates of around 60 fps at resolutions of up to 1280x1024 are considered noteworthy. Similarly, a score around the 15,000 3DMark should be considered ideal for such a card. Once resolution is duly handled, the 3D quality offered by a card is evaluated. For this, we concentrated on the visuals that a card dished out under the later and the greater engine of *UT 2003*, giving it four times as much weightage as we gave *Quake III Arena*. To do this, we enabled Full Screen Anti-Aliasing (FSAA) and Anisotropic filtering for all the cards. A panel of three then judged these and awarded points. We also sampled FSAA scores for these cards, in order to gauge the performance hit that each one took while enabling the said feature.

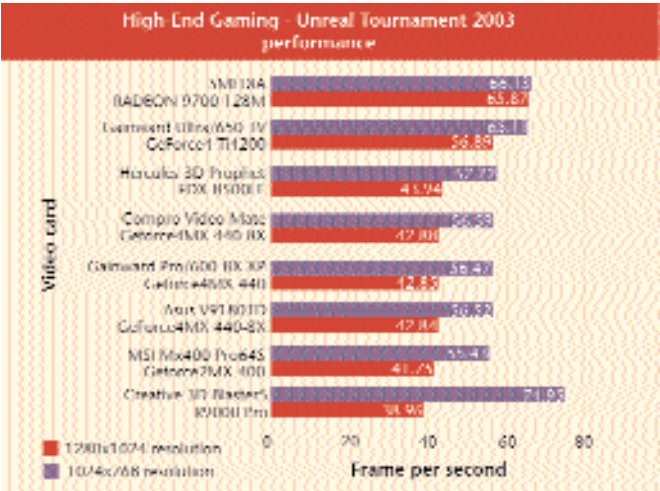
Finally, benchmarks of *Serious Sam*, 3DMark2001 SE and *UT 2003* were given the maximum weightage for performance under this application area. Feature-wise, we judged each card on dual-monitor support, I/O ports (such as S Video-RCA), memory bandwidth, number of pixel/vertex pipelines, API compatibility, etc.

The best video cards for High-End Gaming: A performance STTI of 66 along with an ideal price of Rs 10,000 came together to define the ideal buy under this particular category. To get a range of suitable cards, we formed a band centred at the ideal card with price ranging from a low of Rs 8,000 to a high of Rs 12,000. Thus, all cards with a score greater than 66 STTI and falling within the above price band were deemed suitable to buy. Even though the performance scores within this area were skewed by a relatively low price factor of 20 per cent, it was enough to cause some cards to lose to cheaper brethren. A card such as the Matrox Parhelia was thus immediately out of the running—this particular variant cost a staggering Rs 30,000 even as it failed to score the 66 STTI needed. Similarly upstaged were the Gainward Ultra/750 8X XP Ti4800SE and the Hercules 3D PROPHET R9700. While the Gainward scored 79.22 STTI, its price of Rs 18,895 humbled it next to the Gainward Ultra/650 TV GeForce4 Ti4200—the latter scored significantly less at 78.79 STTI but also came significantly cheaper at Rs 11,995. An identical fate awaited the 3D PROPHET—the R9700-based card scored 75.6 STTI, but its high price of Rs 24,895 saw it lose its glory to another R9700 card—the SMEDIA RADEON 9700 128 MB. The latter scored 82.11, thanks to its cheaper tag of Rs 16,000.

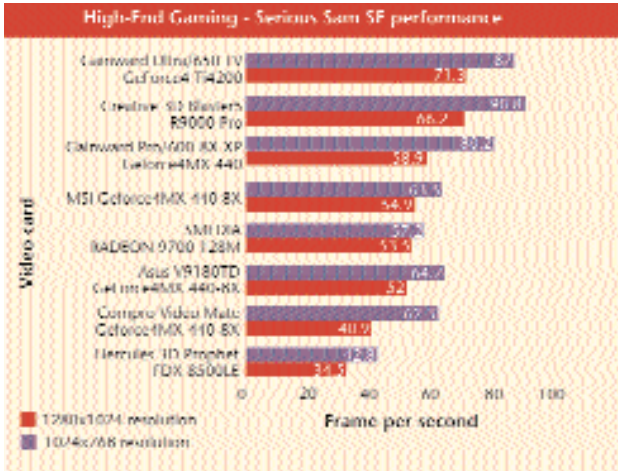
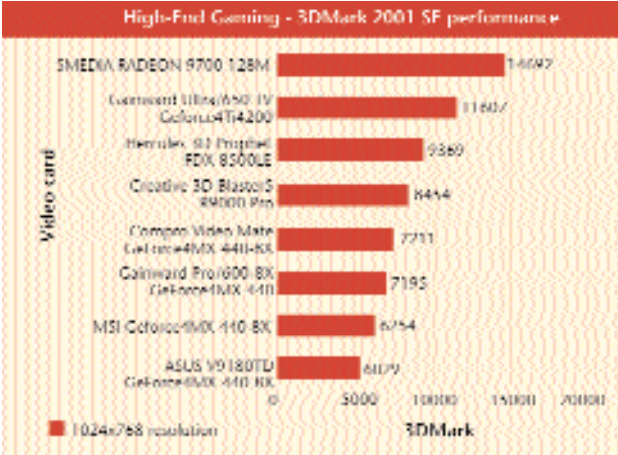
That price is a significant leveller can be further ascertained by looking at the best performers in this application area. The Hercules 3D Prophet R9700 PRO scored 74.04 STTI, while the SMEDIA RADEON 9700 128MB scored 82.11 STTI. Factor in price and the picture becomes clear: between the Hercules at Rs 33,500 and the XSERVE at Rs 16,000, the choice becomes obvious—the latter becomes a recommended solution for the task at hand.

When it came to pure numbers, the ATI cards proved to be a superior buy. From nVidia's stable, the GeForce4MX chipset made a repeat appearance. As pointed out earlier, the low cost and good enough feature set of these chipsets make them an ideal buy—although not one with a great lifespan—for the non-discerning gamer. Solutions from ASUS, COMPRO, Gainward and MSI carried variants of this very chipset.

While all of them managed to cross the 50 fps mark in the *Serious Sam* test, nothing beat the Gainward Pro/600-8X XP GeForce4MX 440 as it touched almost 60 fps at 1280x1024, a great showing indeed considering that it came in as the cheapest buy at Rs 8,300. It also did equally well in the DirectX stresser, *UT 2003*, posting a very playable 42.85 fps at 1280x1024. What then took away its best buy status? The XSERVE RADEON 9700. Its amazing posting of 82.11 STTI at a price of Rs 16,000, tilted the scales in its







favour. Indeed, as pointed earlier, cards based on the ATi Radeon came out tops. Of all tests of notable weightage, these cards lost only once to their rival, the Gainward Ultra/650 TV running on the GeForce4Ti4200 chipset—the test in question being the *Serious Sam* game at a 1280x1024 resolution.

The Gainward scored 71.3 fps, an amazing showing when compared to its nearest competitor, the R9000 Pro-based Creative 3D BLASTER5 (with 66.2 fps). Memory bandwidth-saving technologies such as a faster Z buffer-clear, an efficient memory chip layout and better compression algorithms, allowed the ATi-chipset-based cards to perform very well under high-resolutions. Thus, the 3DMark2001 SE crown at 1024x768 was taken by the efficient and DirectX 9.0 compatible SMEDIA RADEON 9700. The practical application of which shone under the *UT 2003* test, as this particular card managed to stay above the 60 fps mark even at 1280x1024 with a score of 65.87 fps.

Of special mention is the COMPRO VideoMate Cinema. Based on the GeForce4 MX 440 chipset, it bundles together a set-top box that acts as a TV Tuner. You can thus enjoy your favourite TV programmes on your PC and with the help of the right software, you could even record and playback some of your favourite shows and events at the cost of hard disk space. (For more information on how to use such a video card as a personal video recorder, see 'Your PC as a VCR' in the December 2002 issue of Digit.) The card in question costs Rs 11,995, which is significantly more than the ASUS or the MSI versions, undoubtedly due to the TV Tuner card.

The Matrox Parhelia also deserves a mention, thanks due













# Graphics Cards at a Glance

	ASUS V8170 magic	ASUS V8420 Deluxe	ASUS V8420	ASUS V9180 magic	ASUS V9 180TD	ASUS V9280	ASUS V9280S	COMPRO Video- Mate Cinema
Features								
Chipset	GeForce4MX 440	GeForce4 Ti4200	GeForce4 Ti4200	GeForce4MX 440-8X	GeForce4MX 440-8X	GeForce4 Ti4200	GeForce4 Ti4200	GeForce4MX 440
On board memory	64MB DDR	128MB DDR	128MB DDR	64MB DDR	64MB DDR	128MB DDR	128MB DDR	64MB DDR
Dual Monitor Support	✓	✓	✓	✗	✓	✓	✓	✓
Manufacturing Process (micron)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Core Architecture (bits)	256	256	256	256	256	256	256	256
Clock Speed (MHz)	270	250	250	275	270	250	250	270
Memory bandwidth (GB/sec)	6.4	8	8	6.4	6.4	8	8	6.4
RAMDAC Speed (MHz)	350	350	350	350	350	350	350	350
Max Resolution Supported	2048x1536@ 75Hz	2048x1536@ 75Hz	2048x1536@ 75Hz	2048x1536@ 75Hz	2048x1536@ 75Hz	2048x1536@ 75Hz	2048x1536@ 75Hz	2048x1536@ 75Hz
AGP Interface	4X	4X	4X	8X	8X	4X	4X	4X
Compatibility (DirectX/OpenGL)	1	8.1/1.3	8.1/1.3	8.1/1.3	8.1/1.3	8.1/1.3	8.1/1.3	8.1/1.3
Hardware T&L Support	✓	✓	✓	✓	✓	✓	✓	✓
Rendering Architecture								
Pixel Pipelines	2	4	4	2	2	4	4	2
Texture Mapping Units/Pipe	4	8	8	4	4	8	4	4
Pixel Shader/Vertex Shader	X/✓	✓/✓	✓/✓	X/✓	X/✓	X/✓	✓/✓	✓/✓
Visual Effects								
Anti-Aliasing Technology	✓	✓	✓	✓	✓	✓	✓	✓
Trilinear/Anisotropic Filtering	✓	✓	✓	✓	✓	✓	✓	✓
VR Glasses	✗	✗	✓	✗	✓	✗	✗	✗
Video-OUT	✓	✓	✓	✓	✓	✓	✓	✓
Video-IN	✗	✗	✓	✗	✗	✓	✓	✓
S Video-RCA	✓	✓	✓	✓	✓	✓	✓	✓
TV Tuner Chip	✗	✗	✗	✗	✗	✗	✗	✓
Remote Control	✗	✗	✗	✗	✗	✗	✗	✓
Performance								
Serious Sam Second Encounter								
640x480x16	93.8	105	106.1	95.3	98.2	106.3	106.3	119
800x600x32	71.3	96.7	104.9	73.8	95	99.8	98.3	103.2
1024x768x32	30.9	78	73.5	51.5	64.7	75.3	81.5	62.3
1280x1024x32	19.5	79.3	51.3	39.4	52	51.2	59.5	40.9
Quake III Arena								
640x480x16	242.5	333.8	329.9	297.5	310.9	332.5	330.9	330.2
800x600x32	202.6	329.3	312.4	160.3	299.1	316.8	328.7	270.9
1024x768x32	91.2	231.1	211.2	110.4	208.3	277.5	228.8	167.1
1280x1024x32	57.2	175	155.2	70.3	147.5	202.1	186	112.8
VulpineGL Mark								
640x480x16	57.3	114.4	114.1	66.3	95.3	114.2	114.6	109.1
800x600x32	42.6	104.5	104.3	50	75	104.1	104.8	75
1024x768x32	37.6	111.9	70	39.1	53.3	117.6	125.3	53.3
1280x1024x32	26.5	53.4	50.5	24.9	37	89	96.8	36.9
3DMark2001SE								
800x600x32	5768	14146	13478	6472	8062	13927	14461	8264
1024x768x32	4121	12408	11489	4846	6029	11979	12755	7211
Unreal Tournament 2003								
640x480x16	56.01	66.56	66.42	61.2	64.79	66.58	66.6	66.81
800x600x32	43.06	66.43	66.25	50.3	64.08	66.54	66.54	63.88
1024x768x32	29.49	66.03	64.05	35.4	56.52	64.78	65.78	56.59
1280x1024x32	19.98	59.44	56.37	24.38	42.84	57.95	59.89	42.88
3D Image Quality (Scale of 5)								
Quake III Arena	3	4	3	3	4	4	4	3
Unreal Tournament 2003	3	4	3	3	4	4	4	3
Overall Score								
Suitability to Casual Gaming	57.30	60.75	62.54	58.28	65.33	62.13	62.01	65.78
Suitability to High-End Gaming	54.83	71.15	69.52	51.85	67.03	72.35	74.15	68.42
Overall Product Rating	56.06	65.95	66.03	55.06	66.18	67.24	68.08	67.10
Overall Product Grade								
Vendor name	Rashi Peripherals	Rashi Peripherals	Rashi Peripherals	Rashi Peripherals	Neoteric Informatique	Neoteric Informatique	Rashi Peripherals	Mediatech
Phone	022-28260258	022-28260258	022-28260258	022-28260258	022-24172600	022-24172600	022-28260258	022-2239 6696
E-mail	ho@rptechin- dia.com	ho@rptechindia. com	ho@rptechindia. com	ho@rptechindia. com	viren@neoteric- info.com	viren@neoteric- info.com	ho@rptechindia. com	sales@mediatech- india.com
Price (in Rupees)	7,250	23,000	18,000	9,950	9,950	22,000	22,500	11,995

Disclaimer: Prices are indicative and are subject to change



CREATIVE 3D BLA-STER5 RX9000 Pro	ENNYAH Digiforum	ENNYAH Digiforum	ENNYAH Digiforum	ENNYAH Digiforum	ENNYAH Digiforum	ENNYAH Digiforum	ENNYAH Digiforum	GIGABYTE	Gainward Pro/450 TV
Radeon 9000 Pro	GeForce2MX 200	GeForce2MX 400 TV-OUT	GeForce4MX 440 TV-OUT-4X	GeForce4MX 440 TV-OUT-8X	GeForce4MX 420 TV-OUT	Radeon VE	Rage 128 PLUS TV-OUT	Radeon 9500	GeForce4MX 440
128MB DDR	32MB SDRAM	32MB SDRAM	64MB DDR	64MB DDR	64MB DDR	32MB SDRAM	32MB SDRAM	128MB DDR	64MB DDR
✓	✗	✗	✗	✓	✗	✓	✗	✓	✗
0.15	0.18	0.18	0.15	0.15	0.15	0.18	0.25	0.15	0.15
256	256	256	256	256	256	128	128	256	256
275	175	175	270	275	250	183	140	275	270
2	1.3	2.7	6.4	6.4	2.6	2.9	2.5	8.6	6.4
400	350	350	350	350	350	300	300	400	350
2048x1536@75Hz	2048x1536@75Hz	2048x1536@75Hz	2048x1536@75Hz	2048x1536@75Hz	2048x1536@75Hz	2048x1536@75Hz	2048x1536@75Hz	2048x1536@75Hz	2048x1536@75Hz
4X	4X	4X	4X	8X	4X	4X	2X	4X	4X
8.1/1.3	8/1.2	8/1.2	8.1/1.3	8.1/1.3	8.1/1.3	8.1/1.3	8/1.1	8.1/1.3	8.1/1.3
✓	✓	✓	✓	✓	✓	✓	✗	✓	✓
4	2	2	4	4	4	2	2	8	4
4	2	2	4	4	4	2	2	8	4
✓/✓	✗/✗	✗/✗	✗/✓	✗/✓	✗/✓	✗/✓	✗/✗	✓/✓	✗/✓
✓	✓	✓	✓	✓	✓	✓	✗	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
✓	✗	✓	✓	✓	✓	✓	✓	✓	✓
✗	✗	✗	✗	✗	✗	✓	✗	✗	✗
✓	✗	✓	✓	✓	✓	✓	✓	✓	✓
✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
108.3	65.6	33.7	95.5	98.8	108.3	39.7	23.2	104.3	61.3
106	43.7	22.4	80.3	80.3	79.5	28.8	22.9	101	58.9
90.8	13.8	14.4	46.9	50.2	40.7	16.3	Failed	52.8	32.8
66.2	7.1	8.2	30	36.8	26	9.4	Failed	39	21
306.4	130.2	95.5	251.7	305.2	246.8	103.8	47.9	295.3	293.4
275.2	43	39.5	237.9	266.2	158.2	53.1	28.2	287.2	255.4
195.6	26.9	23.1	148	201	111.1	36.4	11.4	185.9	45.7
124.6	15.1	13.9	96.6	104.8	70.8	17.3	Failed	115.5	29.3
89	23.8	29.1	75.2	95.4	66.1	27.8	Failed	83.4	54.8
80.2	17.8	20.7	58	74.6	49.9	20.9	Failed	77	43.3
73.7	11	11.4	44.2	53.2	39.3	13.9	Failed	73.1	33.7
57.3	5.2	8.1	32.3	39.4	29.4	8.8	Failed	60	22.9
10208	1923	1878	7373	7279	6539	2543	1516	12715	6504
8454	1310	1046	5927	5780	4877	1430	Failed	10714	4837
63.07	21.1	15.76	64.32	64.32	61.75	24.77	13.01	65.8	61.53
62.82	15.11	10.79	58.77	58.77	50.57	16.97	Failed	65.8	50.48
74.95	9.65	6.28	44.5	47.38	35.62	16.97	Failed	64.4	35.4
38.96	5.74	crashed	31.79	33.55	24.54	11.23	Failed	53.39	24.38
3	1	1	3	3	4	2	1	4	3
3	1	1	3	3	3	2	0	4	3
63.99	60.33	36.99	72.59	76.91	71.94	33.49	21.04	58.59	73.86
74.94	35.58	34.54	60.98	63.82	56.93	38.35	19.29	68.24	56.05
69.47	47.95	35.76	66.78	70.36	64.43	35.92	20.17	63.42	64.96
									
Compuage Infocome Ltd	Great World Tech Pvt Ltd	Great World Tech Pvt Ltd	Great World Tech Pvt Ltd	Great World Tech Pvt Ltd	Great World Tech Pvt Ltd	Great World Tech Pvt Ltd	Great World Tech Pvt Ltd	Tirupati Enterprise	Mediatech
022-28305500	022-23892828	022-23892828	022-23892828	022-23892828	022-23892828	022-23892828	022-23892828	033-22423861	022-2239 6696
info@compuageindia.com	sales@gtechworld.com	sales@gtechworld.com	sales@gtechworld.com	sales@gtechworld.com	sales@gtechworld.com	sales@gtechworld.com	sales@gtechworld.com	gigabyte@tirupati.net	sales@mediatechindia.com
9,200	1,750	2,750	4,750	5,500	4,500	4,000	2,500	17,000	4,990













# Graphics Cards at a Glance

	Gainward Pro/600-8X XP	Gainward Ultra/650 TV	Gainward Ultra/750 8X XP	Hercules 3D PROPHET	Hercules 3D PROPHET	Hercules 3D PROPHET FDX	Matrox Millenium	Matrox
Features								
Chipset	GeForce4MX 440	GeForce4 Ti4 200	Ti4800se	Radeon 9700	Radeon 9700 PRO	Radeon 8500LE	G550	Parhelia 128MB
On board memory	64MB DDR	64MB DDR	128MB DDR	128MB DDR	128MB DDR	64MB DDR	32MB DDR	128MB DDR
Dual Monitor Support	✓	✗	✓	✓	✓	✓	✓	Three monitor
Manufacturing Process (micron)	0.15	0.15	0.15	0.15	0.15	0.15	0.18	0.15
Core Architecture (bits)	256	256	256	256	256	128	256	512
Clock Speed (MHz)	270	250	275	270	325	250	126	220
Memory bandwidth (GB/sec)	6.4	8	2	4	4	8.8	1	4
RAMDAC Speed (MHz)	350	350	350	400	400	400	360	400
Max Resolution Supported	2048x1536@ 75Hz	2048x1536@ 75Hz	2048x1536@ 75Hz	2048x1536@ 75Hz	2048x1536@ 75Hz	2048x1536@ 75Hz	2048x1536@ 75Hz	2048x1536@ 75Hz
AGP Interface	4X	4X	8X	8X	8X	4X	4X	4X
Compatibility (DirectX/OpenGL)	8.1/1.3	8.1/1.3	8.1/1.3	8.1/1.3	9/1.3	8.1/1.3	8/1.1	8.1/1.3
Hardware T&L Support	✓	✓	✓	✓	✓	✓	✗	✓
Rendering Architecture								
Pixel Pipelines	4	4	4	8	8	4	2	4
Texture Mapping Units/Pipe	4	8	8	8	8	8	2	16
Pixel Shader/Vertex Shader	✗/✓	✓/✓	✓/✓	✓/✓	✓/✓	✓/✓	✗/✓	✓/✓
Visual Effects								
Anti-Aliasing Technology	✓	✓	✓	✓	✓	✓	✓	✓
Trilinear/Anisotropic Filtering	✓	✓	✓	✓	✓	✓	✗	✓
VR Glasses	✗	✗	✗	✗	✗	✗	✗	✗
Video-OUT	✓	✓	✓	✓	✓	✓	✗	✓
Video-IN	✓	✗	✓	✗	✗	✗	✗	✗
S Video-RCA	✓	✓	✓	✓	✓	✓	✗	✓
TV Tuner Chip	✗	✗	✗	✗	✗	✗	✗	✗
Remote Control	✗	✗	✗	✗	✗	✗	✗	✗
Performance								
Serious Sam Second Encounter								
640x480x16	91.4	118.5	106.1	99.5	100.3	87.8	42.7	66.2
800x600x32	89.8	<b>116.4</b>	101.3	88.1	92	71.7	31	58.9
1024x768x32	80.2	87	<b>100.3</b>	55.6	62.4	42.8	16.7	48.4
1280x1024x32	58.9	71.3	76	51.6	53.3	34.5	10.8	35.7
Quake III Arena								
640x480x16	305.9	329.8	333	307.6	309.7	322.5	121.6	275.2
800x600x32	268.2	315.9	320	301.7	299.6	299.4	45.4	244.4
1024x768x32	171.2	211.9	282	284.4	<b>292.6</b>	232	36.5	157.5
1280x1024x32	113	149.1	220	256.3	<b>265.9</b>	155.1	23.3	101.3
VulpineGL Mark								
640x480x16	95.3	161.9	<b>166.3</b>	86.8	87.7	90.6	14.5	41.9
800x600x32	76.2	137.6	<b>148.2</b>	80.8	81	82.5	9.7	38.6
1024x768x32	52.5	103.7	<b>126.7</b>	81	81	75.5	Failed	31
1280x1024x32	36.9	76.5	<b>97.8</b>	78.4	78.7	61.3	Failed	26.1
3DMark2001SE								
800x600x32	8159	13662	14496	15145	15798	11228	2189	10076
1024x768x32	7195	11607	12434	13679	14555	9369	Failed	8413
Unreal Tournament 2003								
640x480x16	64.87	67.23	66.49	65.68	65.82	63.27	Failed	62.88
800x600x32	63.33	67.03	66.50	65.75	65.78	62.77	Failed	62.93
1024x768x32	56.47	65.11	65.49	65.89	65.9	57.72	Failed	60.66
1280x1024x32	42.85	56.89	59.84	<b>65.92</b>	65.56	43.94	Failed	52.22
3D Image Quality (Scale of 5)								
Quake III Arena	3	4	4	4	4	4	3	4
Unreal Tournament 2003	3	4	4	4	4	3	0	3
Overall Score								
Suitability to Casual Gaming	69.01	71.20	65.93	57.94	56.39	69.35	22.32	46.87
Suitability to High-End Gaming	72.80	78.79	79.23	75.60	74.08	71.57	17.55	56.67
Overall Product Rating	70.90	75.00	72.58	66.77	65.23	70.46	19.94	51.77
Overall Product Grade								
Vendor name	Mediatech	Mediatech	Mediatech	Mediatech	Mediatech	Mediatech	Neoteric Informatique	Neoteric Informatique
Phone	022-2239 6696	022-2239 6696	022-2239 6696	022-2239 6696	022-2239 6696	022-2239 6696	022-4172600	022-4172600
E-mail	sales@mediate- chindia.com	sales@mediate- chindia.com	sales@mediate- chindia.com	sales@mediate- chindia.com	sales@mediate- chindia.com	sales@mediate- chindia.com	viren@neoteric- info.com	viren@neoteric- info.com
Price (in Rupees)	8,300	11,995	18,895	24,895	33,500	8,995	8,000	30,000

Disclaimer: Prices are indicative and are subject to change



Maxforce	Maxforce	Maxforce	MSI	MSI MX400 Pro64S	PixelView NVG28A 128DDR-DVI	SMEDIA	SMEDIA	SMEDIA	SMEDIA
GeForce2MX 200 32MB	GeForce2MX 400 64MB	Trident T64	GeForce4MX 440 8X	GeForce2MX 400	GeForce4 Ti4200	GeForce4 Ti 4200	GeForce4MX 420	GeForce4MX 440	RADEON 9700 128M
32MB SDRAM	64MB SDRAM	32MB SDRAM	64MB DDR	64MB DDR	128MB DDR	128MB DDR	64MB DDR	64MB DDR	128MB DDR
✗	✗	✗	✓	✗	✓	✓	✗	✓	✓
0.25	0.25	0.25	0.15	0.25	0.15	0.15	0.15	0.15	0.15
256	256	128	256	256	256	256	256	256	256
175	175	125	275	175	250	250	250	270	275
1.3	2.7	1.2	6.4	2.7	8	8	2.6	6.4	17.3
350	350	230	350	350	350	350	350	350	400
2048x1536@75Hz	2048x1536@75Hz	1600x1200@75Hz	2048x1536@75Hz	2048x1536@75Hz	2048x1536@75Hz	2048x1536@75Hz	2048x1536@75Hz	2048x1536@75Hz	2048x1536@75Hz
4X	4X	4X	8X	4X	4X	4X	4X	4X	8X
8.1/1.3	8/1.1	8/1.1	8.1/1.3	8/1.1	8.1/1.3	8.1/1.3	8.1/1.3	8.1/1.3	8.1/1.3
✓	✓	✗	✓	✓	✓	✓	✓	✓	✓
2	2	2	4	2	4	4	2	4	8
2	2	2	4	2	8	8	4	4	8
✗/✗	✗/✗	✗/✗	✗/✓	✗/✗	✓/✓	✓/✓	✗/✓	✗/✓	✓/✓
✓	✓	✗	✓	✓	✓	✓	✓	✓	✓
✓	✓	✗	✓	✓	✓	✓	✓	✓	✓
✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
✓	✗	✗	✓	✓	✓	✓	✓	✓	✓
✗	✗	✗	✓	✓	✓	✓	✗	✗	✗
✓	✗	✗	✓	✓	✓	✓	✓	✓	✓
✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
52.9	50.4	Failed	98.1	85.9	115.2	109.8	94.2	64.8	107.1
37.4	31.8	Failed	94.6	62.9	108.4	87.4	73.8	59.9	105.7
23.2	12.7	Failed	63.5	28.9	74.3	67.5	34.9	41.8	57.2
16.4	7.9	Failed	54.9	16.9	52	51.2	21.3	38.6	53.5
66.8	135.2	53.4	254.2	226.5	329.6	331.2	241	301.4	307
26.5	44.1	19.7	248.9	166.8	320.5	312.7	205	235.1	300.1
21.1	30.9	9.6	206.4	68.8	219.5	213.1	94.6	174.2	282.4
10.4	16.7	5.8	148.3	41.4	167.9	152.2	59.3	114.6	250.9
28.1	26.7	15.2	95.2	52.1	114.2	113.9	59.6	85.2	86.9
19.4	18.9	8.3	75	38.2	104.7	104.4	44.5	65.9	81
12.4	13.1	3.1	52.7	29.3	117.6	113.1	38.7	58.2	81.1
8.1	8.7	Failed	38.4	20.2	89.9	84.9	26.4	44.8	79.4
2155	2392	1027	8321	4343	13896	13635	5954	7703	15824
1238	1332	509	6254	2947	11966	11696	4231	6615	14692
22.95	23.5	6.58	64.67	43.52	66.56	66.54	57.99	120.13	65.74
15.95	16.11	3.02	63.99	31.28	66.5	66.41	45.14	60.88	65.59
9.82	10.03	Failed	55.43	20.75	64.5	64.96	26.28	51.55	66.13
4.27	4.38	Failed	41.75	13.73	57.97	57.07	22.14	37.8	65.87
2	2	2	3	2	4	4	3	3	4
2	2	0	3	2	4	4	3	3	4
41.54	41.92	28.98	59.22	62.53	64.91	68.80	81.18	88.68	62.80
40.58	32.82	20.92	67.80	44.87	75.38	79.94	56.00	66.38	82.12
41.06	37.37	24.95	63.51	53.70	70.15	74.37	68.59	77.53	72.46
									
Maxtone	Maxtone	Maxtone	Priya Ltd	Priya Ltd	Rashi	Xserve India	Xserve India	Xserve India	Xserve India
022-23091664	022-23091664	022-23091664	022-22663611	022-22663611	022-28260258	080-5202915	080-5202915	080-5202915	080-5202915
maxtone@vsnl.com	maxtone@vsnl.com	maxtone@vsnl.com	sales_bom@priyagroup.com	sales_bom@priyagroup.com	ho@rptechindia.com	vivek_gupta@xserves.com	vivek_gupta@xserves.com	vivek_gupta@xserves.com	vivek_gupta@xserves.com
2,200	3,300	1,375	9,400	4,300	17,500	12,750	3,200	3,900	16,000

Decision Maker			
Your CPU	The right card for you	You can play	And how!
250 MHz to 500 MHz	nVidia Riva TNT, ATi Rage 128, Matrox G550, up to nVidia GeForce2MX 200 based video cards (up to Rs 1,750)	<i>Quake III Arena, Serious Sam Second Encounter, Need for Speed: Porsche Unleashed</i>	You will need to play at lower resolutions and colour depth
600 MHz to 800 MHz	nVidia's GeForce2MX 400, GeForce2 DDR, ATi Radeon VE based video cards (up to Rs 4,000)	<i>Serious Sam Second Edition, Jedi Knight II: Jedi Outcast, Need for Speed: Hot Pursuit 2</i>	800x600 should be an ideal screen resolution, do keep most of the visual effects off though
850 MHz to 1GHz	nVidia's GeForce3, GeForce4 MX 440, ATi's 7500, 8500 based video cards (up to Rs 9,000)	<i>Medal of Honor: Allied Assault, Serious Sam Second Encounter, Unreal Tournament 2003</i>	You can graduate to 1024x768 level with FSAA and anisotropic filtering set at low setting
1.1 GHz to 1.5 GHz	ATi's 7500, 8500, nVidia's GeForce4 MX 440, GeForce4 Ti 4200 based cards (up to Rs 12,000)	<i>Medal of Honor: Allied Assault, Serious Sam Second Encounter, Unreal Tournament 2003, Unreal 2</i>	Play at 1024x768 with texture details set to high and FSAA and anisotropic filtering set to mid-levels
1.6 GHz to 2 GHz	ATi's 8500, nVidia's GeForce4 Ti4200, GeForce4 MX 440-8X based video cards (up to Rs 12,000)	<i>Medal of Honor: Allied Assault, Serious Sam Second Encounter, Unreal Tournament 2003, Unreal 2</i>	With at least 256MB of DDR RAM in tow, a smooth gaming experience awaits you at 1024x768
2.2 GHz and above	ATi 9700, GeForce4 Ti 4800 based video cards (up to Rs 19,000)	Almost any game	Enjoy a game at the highest level of visual detail

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to its poor showing. It was often bested by older technology—the MSI GeForce4MX 440 card beat it under *Serious Sam* with scores of 63.5 fps and 54.9 fps, while the Parhelia posted 48.4 fps and 35.7 fps at 1024x768 and 1280x1024, respectively. As is evident, it also failed to cross the 60 fps mark in *Serious Sam* and managed to just achieve that goal under *UT 2003* with 60.66 fps at 1024x768. This would not be a bad showing at all if it wasn't for the price tag of Rs 30,000. As it stands, we can only recommend this card for those few of you who wish to work and play with three monitors simultaneously.

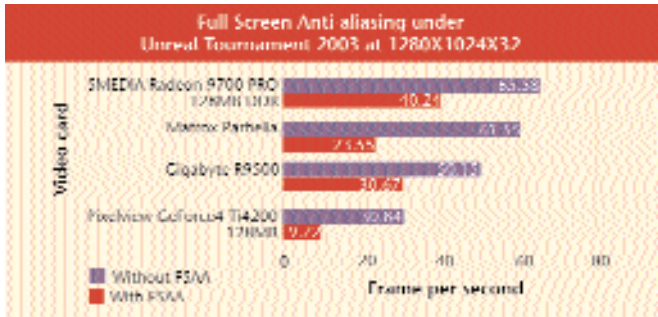
Our recomendaded solution: Creative 3DBlaster5 RX 9000 Pro.

What it all leads to

That the consumer video card market is split unevenly between nVidia and ATi solutions was apparent from this comparison test. The entry-level cards are currently based on nVidia's Rage and GeForce2MX chipsets, but these will soon be pushed out of contention by their older GeForce4MX brethren. As they should be: the ENNYAH RAGE 128 PLUS failed to show textures for 3DMark2001 SE; under *UT 2003*, it showed corrupt textures for the low resolutions and failed to run the high resolutions altogether. Clearly, age is visible.

While a GeForce2MX-based card can still be a cheap buy, it would soon grow long in the tooth as is showcased by the Max-force GeForce2MX 200, a card that refused to touch 30 fps in *UT 2003*. Solutions from Trident and Matrox also failed to impress. While the Trident T64 costs the least at Rs 1,375, it brings with it texture corruption galore in tests that show future-readiness (3DMark2001 SE and *UT 2003*), while failing to perform to any acceptable level in all tests but the low resolution one under *Quake III Arena* (where it scored a decent 53.4 fps at 640x480). The Matrox cards are too costly for the application areas under which they fall, thanks both to technology and performance. The Millenium G550 at Rs 8,000 is in no way a casual gaming solution.





Similarly, the Parhelia at Rs 30,000 is outdone in performance by cards that cost half as much.

The game thus revolves around two players: nVidia and ATi. And the tables seem to be turning. While the budget solutions are still nVidia-chipset-based cards, ATi is capturing the high-end segment, thanks to feature-rich, high-performing variants of its DirectX 9.0-compatible R300 chipset. While we couldn't get our hands on a GeForce FX-based card, numbers flying around the Internet suggest that it is not a clear winner over the R9700 by far. Further speculations suggest that the R350 (ATI's answer to the FX) will not only cost less but also perform 10 to 20 per cent better. As it stands, an R9700-based card is our recommended choice for high-end gaming.

If you eat and breathe the frame rates and won't touch games without FSAA and Anisotropic filtering set to maximum, then look no further, **SMEDIA RADEON 9700** is the card that will quench your thirst. This card easily won our Best Performance Award. It is equipped with dual monitor capability and S-Video Out so you can watch high-quality movies on a television set. In *Quake III Arena* at 1280x1024x32 with settings kept at high, it logged a frame rate of 250.9 fps, which is not attainable by most of the cards in the market. The same was the case in DirectX-based 3DMark2001SE, where it touched 14692 3DMarks.

This figure gives an indication of the amount of power packed in this graphics card. The card also returned a very impressive 65.87 fps in *UT 2003* at 1280x1024x32 resolution.

Our Best Value Award goes to the **SMEDIA GeForce4 MX440**.

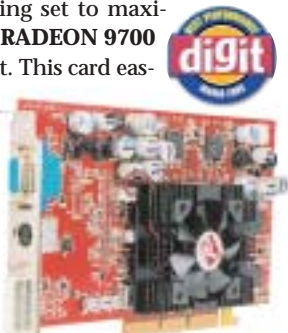
This card comes with both D-Sub and a DVI connector to connect two monitors to the PC and S-Video Out so you can enjoy the pleasure of a bigger screen. The card is well suited to those who want to play the latest games but don't mind disabling some features to get higher frame rates. The card gave some impressive results in our benchmarks. In *SeriousSam SE*, the card reached a high of 59.9 fps at 800x600 resolution. This means that the card can easily run most OpenGL-based games

such as *Jedi Knight II*. In *UT 2003* the card logged 60.88 fps at 800x600 resolution, which means that whatever kind of game you play, be it first person shooter or strategy game, it will simply fly with this card plugged into the system.

With a price tag of just Rs 3,900, this card is a steal.

ALIASGAR PARDAWALLA and AHMED SHAIKH

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At Rs 16,000 the SMEDIA RADEON 9700 is the best gaming solution



A GeForce4MX chipset makes this SMEDIA card the best buy

# Drive 'em Crazy

We call up the best wheels and race them against each other to the finish line

The wheel caters to a very small category of gamers as it can only be used with high-speed racing simulators. This was the only category that saw a very limited competition with no product from Microsoft and only one Logitech high-end product. Saitek, Frontech and Typhoon managed to fill in the gaps with some good, some bad and some strictly ordinary wheels. The cheapest wheel was from Typhoon, while the ones from Logitech and Saitek stole the lime light for being expensive.

### Test process

We tested all the gaming devices on our test-bench comprising a Pentium 4 2.2 GHz on an MSI 845E MAX2 BLR motherboard, 256 MB DDR RAM and a 40 GB Seagate ATA IV 7,200-rpm hard drive running Windows XP. The devices were tested on four primary parameters: features, ergonomics, build quality and value for money. Each parameter was assigned 25 per cent weightage. The overall scores were then calculated from how much the device scored in each area.

**Features:** For evaluating the features of every wheel, we took into account various parameters such as the interface of the device. A device with a USB interface scored higher than that with a game port interface. The presence of both analog and digital controllers fetched some extra points. More the number of programmable buttons, more were the points awarded to the product; floor pedals as against hand paddles for gas and brake functions made for brownie points. Features such as rumble effects and force feedback were awarded extra points.

**Ergonomics:** To calculate the ergonomics of the wheel, we took into account various criteria such as the size of the steering wheel and its grip. Wheels with a recess for the thumb and rubberised steering scored more than the ones without them. The button layout was also considered when awarding points—a better layout, with well-placed buttons scored more. Points were also awarded for the feel of the floor pedals, depending on their designed and pivot angle.

**Build quality:** Wheels by their very nature are huge and sturdy. We awarded points for the quality of materials used, the quality of the joints and their overall build. The but-



- Go for a wheel with floor pedals over a hand-mounted one for a more realistic gaming experience.
- The length of the floor cable should be enough to connect to the main steering wheel and must be detachable for portability.
- The clamping mechanism of the wheel should be strong enough to hold the wheel in position, so ensure that your wheel of choice has a proper clamping device.
- The wheel should ideally have four programmable buttons and wheel mounted gear paddles for shifting the gears, apart from the floor pedals for gas and brakes.
- A force feedback wheel may be a good investment in thrill but it does come at a price. Consider it only if you are likely to play every racing game released.

tons were awarded points based on tactility and tackiness. The wheel with an anti-skid floor board was given more points. Also, the wheel with good clamping mechanism scored more.

## Frontech Adventure Wheel

**Features:** Rumble effects, wheel mounted gas, brake pedals, 10 programmable buttons, one D-pad, floor gas and brake pedals  
**Price:** Rs 1,600 **Contact:** Jupiter Infosys India Ltd  
**Phone:** 022-2001211/2001212 **E-mail:** frontech@bom 5.vsnl.net.in **Web site:** www.frontechonline.com

This was the only wheel with rumble effects in the entire comparison. The Adventure sports a D-pad, and hand-gas and brake pedals. The steering wheel has three spokes with a clean button layout. The base is light and four suction cups hold the wheel in place. A toggle switch allows you to choose between the wheel and the D-pad. The rumble effects are precise, but failing to configure it properly makes it vibrate continuously. Rumble effects, 10 programmable buttons, a D-pad and a choice between hand or floor pedals for the gas and brake, for just Rs 1,650 make it irresistible.



Frontech Adventure Wheel		B+
Features	▶▶▶▶▶▶▶▶▶▶	
Build quality	▶▶▶▶▶▶▶▶▶▶	
Ergonomics	▶▶▶▶▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶▶▶▶▶	

## Logitech WingMan Formula Force

**Features:** Force feedback effects, wheel mounted gear switches, four programmable buttons, floor brake, gear pedals  
**Price:** Rs 6,999  
**Contact:** Aditya Infotech Ltd **Phone:** 022-26338555 **E-mail:** sunil\_zarekar@adityagroup.com **Web site:** www.logitech.com

The WingMan Formula Force GP is one of the best wheels we've seen. The build quality is rugged and the red rubber grips make the wheel non-slippery. The gear paddles are done away with and the touch-and-go switches are placed just underneath the spokes. The other four buttons are mounted on the facing surface of the spokes. The foot pedal is connected to the main unit via a small RJ45-like pin and uses a high-quality spring that provides an excellent response. It sports a slip-free design and is pivoted at right angles for comfort gaming. The Formula Force GP provides excellent force feedback with commendable accuracy and precision. This wheel has it all—good ergonomics, ample force feedback effects coupled with ease of use.



Logitech WingMan Formula Force GP		A-
Features	▶▶▶▶▶▶▶▶▶▶	
Build quality	▶▶▶▶▶▶▶▶▶▶	
Ergonomics	▶▶▶▶▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶▶▶▶▶	



## Saitek R100 Sports Wheel

**Features:** Game port interface, wheel-mounted pedals, two buttons, floor gas brake pedals **Price:** Rs 2,250 **Contact:** Origin Marketing Pvt Ltd **Phone:** 022-28801335 **E-mail:** origin@vsnl.com **Web site:** www.saitek.com

The R100 Sports Wheel has a perfect set of features and performance. The design is very well-laid out with ample space and no cramping of buttons. The grip has a recess for the thumb at just the right place. The steering wheel uses a different granular material for the palm grips. Two buttons are placed within the reach of the thumb, and the two pedal switches are wheel mounted and can be used as excellent gear shifters.

The clamping mechanism holds the wheel firmly in place and requires just a minute to dismantle. The footboard can be dismantled from the main steering unit using a small RJ45 pin. The brake and the gas pedals use a stiff spring to provide optimum response, when pressed, requiring a firm push to the floor. The floorboard however, disappointingly skids a lot when called for duty.

Our R100 had a game port and we had a tough time detecting it and getting it to work properly in some games. We even had to download the drivers from the Web site. The wheel comes with a USB version that does away with these problems. With a price of Rs 2,250, the wheel is a good non-force feedback buy.



Saitek R100 Sports Wheel		B+
Features	▶▶▶▶▶▶	
Build quality	▶▶▶▶▶▶	
Ergonomics	▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶	

## Typhoon Power Wheel

**Features:** Large steering wheel, four programmable buttons, floor gas/brake pedals, a gear shifter knob, USB interface **Price:** Rs 1,650 **Contact:** Hitech Computers **Phone:** 022-24927323 **E-mail:** bom@hitechit.com **Web site:** www.anubisline.com

The Typhoon Power Wheel does not score well in the aesthetics department. However, the steering surface is coated with rubber for excellent grip and four buttons are mounted on the two spokes within easy reach. The highlight, though, is the presence of a gear shifter knob—the gears move as smooth as a hot knife through butter.



The footboard is large with big foot pedals and the surface is made rough by small plastic bubbles for a good grip. Good anchoring to the floor doesn't let the footboard skid even when slammed hard.

The steering wheel uses very stiff spring for centring and hence requires some effort to steer the car properly. The steering wheel is very comfortable due to its large size and is quite responsive. Disappointingly, the foot-

board is attached to the main steering wheel and cannot be detached or dismantled.

At Rs 1,650 it may seem a little steep, considering the build quality and features it offers.

Typhoon Power Wheel		B+
Features	▶▶▶▶▶▶	
Build quality	▶▶▶▶▶▶	
Ergonomics	▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶	

## Saitek R440 Force Feedback

**Features:** Wheel-mounted pedals, four programmable buttons, floor gas and brake pedals **Price:** Rs 6,999 **Contact:** Origin Marketing Pvt Ltd **Phone:** 022-28801335 **E-mail:** origin@vsnl.com **Web site:** www.saitek.com

The Saitek R440 is a mean machine with an aggressive design. The four programmable buttons are placed on the wheel within easy reach. However, the grip is not too firm and the wheel feels a tad cramped.

The footboard is made up of two parts and the pedal assembly can be dismantled from the extended board. One nagging problem that we came across was that the footboard lacks any anchoring material. It skids when playing—an obviously irritating distraction during an intense race. Moreover, the gas and brake pedal can do with better spring tension to elevate the experience.

The force feedback effects were good but not very precise, and the wheel made an irritating noise when used. The SGE programming utility bundled along, also lacks user-friendliness and is tedious to work with. The Saitek R440 Force Feedback wheel is a good gaming tool that lacks the refinement that one sees in Logitech devices. At Rs 6,999 it provokes a second thought, especially since other wheels from the same house pack more features at the same price.



Saitek R440 Force Feedback Wheel		B-
Features	▶▶▶▶▶▶	
Build quality	▶▶▶▶▶▶	
Ergonomics	▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶	

## Typhoon Racer Wheel

**Features:** Wheel-mounted gas and brake buttons, 14 programmable buttons, four P.O.V button and USB interface **Price:** Rs 1,080 **Contact:** Hitech Computers **Phone:** 022-24927323 **E-mail:** bom@hitechit.com **Web site:** www.anubisline.com

At first sight, this wheel gives the impression of being cumbersome and clumsy given the thousand-odd buttons thrown on its surface. The buttons for acceleration and brake are mounted on the wheel, and can be operated using the thumb. Though this is good since the buttons are ideally placed just under the thumb, Typhoon did a somersault by not providing the right type of buttons. These buttons require to be squeezed hard to keep the acceleration on and the same goes for the brake.

The centre console is a button farm with four P.O.V (point of view) buttons and 14 other programmable buttons. The Joystick is centred by stiff springs that jump into action the moment you turn the wheel to either side. The base is small with four suction cups for grip, yet the device slips on a smooth surface.

A price tag of Rs 1,080 hits the sweet spot. The game port version of this wheel is also available for Rs 990, but with less buttons. We advice you to stick to the USB version since it is simple to install and gets detected quite easily.



Typhoon Racer Wheel		B+
Features	▶▶▶▶▶▶	
Build quality	▶▶▶▶▶▶	
Ergonomics	▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶	

# Joy to the World

Sitting snugly in the palm of the hand, the joystick is everyone’s favourite gaming device. We evaluated this versatile performer to bring you the best

The Indian market has some of the best joysticks present in the global scenario. A glut of low-priced sticks storm the arena every few months, and then vanish off the shelf at the same speed. The major players are Microsoft and Logitech with awesome technologies and prices to match. Companies such as Saitek, Frontech and Typhoon provide the price-to-performance advantage. We tested 10 joysticks from five different vendors on various parameters.

## Digit Test Process

We tested the gaming devices on our test-bench comprising a Pentium 4 2.2 GHz on an MSI 845E MAX2 BLR motherboard, 256 MB DDR RAM and a 40 GB Seagate ATA IV 7,200-rpm hard drive running Windows XP. Four primary parameters were considered: features, ergonomics, build quality and value for money. Each parameter was assigned a weightage of 25 per cent. The overall scores were then calculated from these.

**Features:** For evaluating the features, we took into account various parameters—a USB interface scored better than a game port interface. Other features that made a difference were force feedback, number of axis, the presence of a hat-switch, a push throttle and the number of programmable buttons.

**Ergonomics:** Comfort is of paramount importance when judging the usability of a joystick. We awarded points for a large palm rest at the base of the stick. Sticks with good comfortable buttons evidently scored more. The grip and thumb recess made for more points.

**Build quality:** The build quality was evaluated on various factors such as quality of the materials used—the ball joint was given prime importance. As far as the button quality was concerned, we considered the tackiness and the play the button offers—lesser the play, better the sturdiness and hence higher the score. For overall finish, we looked for panel gaps and squeaking sounds that are usually present in a bad quality product.



- Joysticks are ideal for playing flight simulator and space games, so if you are a great fan of these don't settle for a game pad.
- Joysticks are available in many flavours, but ideally they should have a hat-switch, a throttle control and at least six programmable buttons.
- Before you buy a joystick, check out the ball joint to ensure its durability. Do this by holding the broom stick and moving it side ways, if the motion is jerky or sticky, don't buy it.
- Before you zero-in on a stick, hold it to see whether your palm and fingers feel comfortable, and your fingers reach the buttons without extending them.
- Always buy a stick with a heavy base, since a light base will skid or trip when the stick is moved vehemently.
- If you are an avid fan of flight simulators, go for a stick that has three axes. This will give you better control over the rudder.

## Frontech JIL-1730 Joystick Action

**Features:** An unresponsive throttle, six programmable buttons and a 4-way hat-switch **Price:** Rs 1,200 **Contact:** Jupiter Infosys India Ltd **Phone:** 022-2001211/2001212 **E-mail:** frontech@bom5.vsnl.net.in **Web site:** www.frontechonline.com

The JIL-1730 lacks in quality and feels too light; people with small hands may not be able to reach the head-mounted buttons. The stick does offer a large palm rest for maximum comfort and has four suction cups that hold the table firmly.

The head has two sunken buttons on either side of a centrally placed four-way hat-switch. The buttons are hard and require a firm push to operate. The trigger offers a tactile feel with good response. The joint seriously lacks the punch and feels too slack. A throttle wheel provides enough throw for linear throttle control but could be improved upon. Installation is hassle-free, but the calibration is a bit of a worry since you need to use the trim controls present on the underside of the joystick while calibrating the X and Y axis.

With a price tag of Rs 1,200, it's way too expensive considering that at the same price one can get more features with a better build quality.



Frontech JIL-1730 Joystick Action		B-
Features	▶▶▶▶▶▶	
Build quality	▶▶▶▶▶▶	
Ergonomics	▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶	

## Frontech JIL-1737 Josh Stick

**Features:** Rumble effects, USB interface, two-axis control, a slider for controlling the rumble effects **Price:** Rs 1,500 **Contact:** Jupiter Infosys India Ltd **Phone:** 022-2001211/2001212 **E-mail:** frontech@bom5.vsnl.net.in **Web site:** www.frontechonline.com

The entire body of the Josh stick is in dark violet with a silvery base, making it an absolute stunner. The thumb recess, good amount of thumb rest and large palm rest pad make it very comfortable even during long gaming sessions.

Two buttons are mounted on the head along side the hat-switch and one button is placed under the thumb for quick-action fire. The trigger button is smooth. The base is large with suction cups at the bottom to hold on to any surface tightly. It has a Turbo, Slow, Clear, Select and Start button alongside a slider that can be used to vary the rumble effects.

We experienced problems getting the rumble effects since the drivers could not properly detect the device. This device could do much better with more reliable drivers that can get the maximum out of it. A price tag of Rs 1,500 for a rumble stick with a good design does make it a good option though.



Frontech JIL-1737 Josh Stick		B+
Features	▶▶▶▶▶▶	
Build quality	▶▶▶▶▶▶	
Ergonomics	▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶	



## Logitech WingMan Attack 2

**Features:** Two-axis control, USB interface, six programmable buttons  
**Price:** Rs 1,399 **Contact:** Aditya Infotech Ltd  
**Phone:** 022-26338555 **E-mail:** sunil\_zarekar@adityagroup.com  
**Web site:** www.logitech.com

The WingMan Attack 2's jet black colour with a light grey base makes it stand out from the crowd. Silver buttons with a little blue thrown in, highlight the base. It offers a good grip, large rest pad and an angular thumb rest pad, much like the rest of the Logitech line-up. The base is unusually heavy, imparting a very stable feel and making it durable. The ball joint is stiff and needs a firm push to jerk it around, making the stick less responsive while playing an intense game. One good feature is that the joint is covered by a leather sheet, making it impervious to dust and grime. The head assembly consists of only one button and a hat-switch is sorely missed when playing a flight simulation game.

This joystick has a good build quality with a stable base, well-laid out buttons and an overall good game response. Costing Rs 1,399, it feels a tad expensive when considered alongside other joysticks that offer features such as hat-switch, two extra buttons and the most important—third axis for Rs 200 less.



Logitech WingMan Attack 2		B+
Features	▶▶▶▶▶▶	
Build quality	▶▶▶▶▶▶	
Ergonomics	▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶	

## Logitech WingMan Strike Force

**Features:** Force Feedback, seven programmable buttons, one clickable scroll wheel, three-axis control, two programmable hat-switches, slide throttle **Price:** Rs 6,999 **Contact:** Aditya Infotech Ltd  
**Phone:** 022-26338555 **E-mail:** sunil\_zarekar@adityagroup.com  
**Web site:** www.logitech.com

Logitech has worked hard to make the WingMan Strike Force 3D a flawless gaming peripheral. The placement of buttons is ideal and the clickable scroll wheel swaps weapons rapidly. The thumb fits firmly on the sliding throttle which has a good amount of throw angle.



However, the design is not ambidextrous. The base is quite heavy and the force feedback effects are sharp and quite realistic. But they lack the bite that Microsoft devices offer. This stick also has sensors that cut out feedback when the stick is not held.

It however, lacks refined sensitivity.

The installation was a breeze with Logitech's WingMan profiler program handling everything from installation to calibration. Although not very intuitive, the software is simple to configure and use. You can set force feedback effects and dead zone settings and can also test the variety of force effects assigned to the buttons.

WingMan Strike Force 3D comes at a heavy price of Rs 6,999, and falls in the league of expensive gaming devices.

Logitech WingMan Strike Force 3D		A-
Features	▶▶▶▶▶▶	
Build quality	▶▶▶▶▶▶	
Ergonomics	▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶	

## Logitech WingMan Force 3D

**Features:** Force feedback, seven programmable buttons, a concave hat-switch, three-axis control **Price:** Rs 4,999 **Contact:** Aditya Infotech Ltd  
**Phone:** 022-26338555 **E-mail:** sunil\_zarekar@adityagroup.com **Web site:** www.logitech.com

This WingMan Force 3D has a button layout similar to that of the Strike Force 3D with the missing scroll wheel button and a more compact base.

The trigger button and secondary fire buttons are very responsive and a delight to use during rapid fire sessions. The force feedback effects are average and not very pronounced or precise as in the WingMan Strike Force 3D. The stick also features a third axis for perfect rudder control. It uses a USB interface to connect itself to a PC, and does not support a game port. An external adapter takes care of the force feedback power requirements.

With a price tag of Rs 4,999 and awkwardly placed buttons, the device is expensive for the features that are on offer. In case you don't want a force feedback joystick, try the WingMan Extreme digital 3D that sports the same design and button layout but does not incorporate force feedback while offering game port connectivity.



Logitech WingMan Force 3D		B+
Features	▶▶▶▶▶▶	
Build quality	▶▶▶▶▶▶	
Ergonomics	▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶	

## Microsoft SideWinder Force Feedback 2

**Features:** USB interface, force feedback, three-axis control, hat-switch, eight programmable buttons **Price:** Rs 7,500  
**Contact:** Trifen Technologies **Phone:** 022-26236061/6226777  
**E-mail:** trifen@vsnl.com **Web site:** www.microsoft.com

The first welcome detail in the new SideWinder is the power adapter at the base of the stick that lets you connect the stick directly to a power outlet. The base is made of a granular material for a good grip and the small rubber pegs sit it firmly on the table even when jerked around.

The force feedback effects were pronounced, with every small force being directed to the stick precisely. Two smart sensors stop the feedback the moment your hand leaves the stick. Like every Microsoft product, you just have to plug the stick to a USB port and load the accompanying drivers. The SideWinder game controller software shows the various settings for the forces graphically. If you have a VIA chipset, you need to install a small patch for the force feed to work properly.

This is the ultimate gaming device money can buy. With a price tag of Rs 7,500 it is too expensive for all but the discerning gamer.



Microsoft Force Feedback 2		A-
Features	▶▶▶▶▶▶	
Build quality	▶▶▶▶▶▶	
Ergonomics	▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶	

Microsoft SideWinder Precision 2

Features: Three-axis control, eight programmable buttons, hat-switch and an excellent throttle Price: Rs 1,200  
Contact: Trifen Technologies Phone: 022-26236061/6226777  
E-mail: trifen@vsnl.com Web site: www.microsoft.com

The Microsoft SideWinder Precision 2 is designed exclusively for the Indian gaming market. It incorporates very few cosmetic and functional changes. The base is smaller, lighter and funkier than its older counterpart but sports the same design with a comfortable grip, thumb recess and a comfortably-sized palm rest. While the button layout remains the same, one of the most promising differences is its excellent throttle. The throttle has a sizeable amount of throw angle and thus gives a very linear response.



Since the base was redesigned and made smaller, it weighs less and hampers the stability to an extent; the rubber pegs hold on to the surface, but the stick has a tendency to trip when jerked sideways. The presence of a third axis is laudable considering the price for which it sells in the market.

At Rs 1,200, the eight buttons, hat-switch, excellent throttle, third axis and good build quality. It is reasonably priced for the causal and amateur gamer alike.

Microsoft SideWinder Precision 2		A-
Features	▶▶▶▶▶▶▶▶	
Build quality	▶▶▶▶▶▶▶▶	
Ergonomics	▶▶▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶▶▶	

Saitek ST330 USB Control Stick and Throttle

Features: Rumble effects, USB interface, two-axis control, four programmable buttons Price: Rs 2,990 Contact: Origin Marketing Pvt Ltd Phone: 022-28801335 E-mail: origin@vsnl.com Web site: www.saitek.com

This joystick, in the tradition of all other Saitek joysticks, is ambidextrous in design. The trigger is the same as used in the Cyborg—feather light, with excellent tactile feedback. The head layout is a bit awkward and the palm rest pad is small but provides just enough space.

The buttons are of good quality with an excellent tactile feel and good response. The push throttle is precise and has enough throw-angle for providing linear control over the throttle. The base is appropriately heavy and stable. This stick displayed good rumble effects with precise vibrations. It has only four buttons, rendering itself useless when playing a full-fledged flight simulator. A hat-switch, which should be a standard fitment on a joystick of this class, is also completely missing.

Saitek tried to fit in the excitement of a force feedback joystick into a price of Rs 2,990 and failed—the stick is over priced and misses out on a number of features.



Saitek ST330 USB Control Stick and Throttle		B+
Features	▶▶▶▶▶▶▶▶	
Build quality	▶▶▶▶▶▶▶▶	
Ergonomics	▶▶▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶▶▶	

Saitek Cyborg 3D USB Gold

Features: Customisable palm rest, tiltable head assembly, eight programmable buttons, USB interface, push throttle, three-axis control Price: Rs 2,990 Contact: Origin Marketing Pvt Ltd Phone: 022-28801335 E-mail: origin@vsnl.com Web site: www.saitek.com

The Cyborg 3D USB Gold comes with a new colour scheme, a funky futuristic design, an all new Saitek Gaming Extension (SGE) programming utility and a USB connection.

It sports an ambidextrous design. The height of the stick can be adjusted. For even better customisation, the tilt of the hat switch can be modified to bring it closer or take it further from your thumb. Saitek has thoughtfully supplied an Allen key that gels into the body of the stick and is mounted on its back.



A push throttle is also provided and the trigger button gives a feather touch operation. The operation of the stick is very smooth and does not display any signs of jerkiness.

The accompanying Saitek Gaming Extension (SGE), a programming utility, is quite powerful as far as programming is concerned, but is very tedious to work with.

This futuristic, feature-rich, highly customisable ambidextrous joystick is priced at Rs 2,990.

Saitek Cyborg 3D USB Gold		B+
Features	▶▶▶▶▶▶▶▶	
Build quality	▶▶▶▶▶▶▶▶	
Ergonomics	▶▶▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶▶▶	

Typhoon 3D Joystick

Features: Three-axis control, six programmable buttons, a push throttle Price: Rs 825 Contact: Hitech Computers Phone: 022-24927323 E-mail: bom@hitechit.com Web site: www.anubisline.com

The Typhoon 3D Joystick is cleanly designed without curves or recesses that can increase or decrease usability. It is of an optimum length with a fairly small palm rest. The button layout is perfect, while the base is large with five suction cups to grasp a desk with confidence. The base has a ring throttle and two turbo fire buttons relegated into the background as the trigger buttons, which work smoothly. A third axis offers perfect rudder control.



A secondary fire button and a hat-switch placed above, form the head. The hat-switch is very easy to reach and is quite responsive. The buttons are very tactile, and provide a good feedback. The trigger too is a delight to use with absolutely no force required to push at it. Two buttons are laterally mounted just under the thumb for easy access.

The Typhoon 3D joystick is good where the price-to-feature ratio is concerned—at a price of Rs 825, you get the four buttons, a hat-switch, a ring throttle and a third axis.

Typhoon 3D Joystick		B+
Features	▶▶▶▶▶▶▶▶	
Build quality	▶▶▶▶▶▶▶▶	
Ergonomics	▶▶▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶▶▶	



# Pads to Launch your Game on

The often sidelined gamepad is slowly comming into its own. We invited the best to thrash it out in our tests and here we bring you the results

Gamepads are the most versatile of all gaming devices since they operate with almost every game. The cheapest gamepad for our tests came from Frontech. The best of the best came from the Logitech stable with cordless technology on offer, albeit at a price. The other competing vendors were Typhoon and Saitek. The ones that really shocked us were the ones from Microsoft which were aggressively priced.

## Digit Test Process

We tested the gaming devices on our test-bench comprising a Pentium 4 2.2 GHz on an MSI 845E MAX2 BLR motherboard, 256 MB DDR RAM and a 40 GB Seagate ATA IV 7,200-rpm hard drive running Windows XP. Four primary parameters were considered: features, ergonomics, build quality and value for money. Each parameter was assigned a weightage of 25 per cent. The overall scores were then calculated from these. Features: For evaluating the gamepad features, we took into account various parameters—a USB interface scored better than a game port interface. The presence of both analog and digital controllers fetched some extra points. The number of programmable buttons was also taken into account. The presence of a throttle and niche features such as rumble effects, motion sensor and cordless technology got some extra points. Ergonomics: We awarded more points to gamepads that had large comfortable grip handles with anti-slip materials. Gamepads with a comfortable grip that offered optimum angle between the two handles was suitably rewarded. The spacing of the buttons, the angle at which they are placed to the thumb, etc was also taken into account. Build quality: The build quality was evaluated on various factors such as quality of materials used, button quality and feel, etc. For overall fit and finish, we noted the panel gaps, the sturdiness of the battery compartment flaps and the squeaking made during a good thrashing.



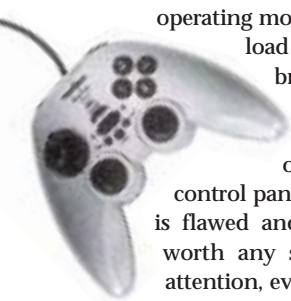
- Before buying a gamepad, check the interface on your computer. If you have a USB port, go for a USB device; else go for the old game port interface.
- Ideally, a gamepad should have at least six standard buttons, one eight-directional D-pad and two shoulder-mounted triggers.
- Gamepads are more suitable for playing arcade games, side scrolling games or sport simulation games. Hence don't buy a gamepad if you want to play only flight simulations.
- For smooth and linear control, opt for game pads with analog controller sticks.
- Hold the gamepad in your hand, and check whether you are comfortable with the button layout, D-pad, etc.
- Check the length of the cable—it should be at least 4 feet long.

## Frontech JIL-1736 Fantasy Pad

Features: Eight programmable buttons, two analog controllers, one D-pad Price: Rs 850 Contact: Jupiter Infosys India Ltd Phone: 022-2001211/2001212 E-mail: frontech@bom5.vsnl.net.in Web site: www.frontechonline.com

The Fantasy pad from Frontech features the patented silver-black two-tone colour finish. The handles are too close to each other and rather too big. The D-pad has a good tactile feel and quick response. The buttons are not properly laid and the analog sticks are placed very close to them. The analog sticks are over rubberised, making them sticky and uncomfortable when used for long periods. The four shoulder-mounted trigger buttons are too loose and very tacky.

A mode button toggles the game pad between analog and digital mode. A small LED just above the mode button indicates the operating mode. To install the pad, plug into a USB port and load the accompanying driver. The pad can be calibrated through the game controller options in the control panel. The JIL-1736 is flawed and certainly not worth any serious gamer's attention, even at Rs 850.



Frontech JIL-1736 Fantasy Pad		B-
Features	▶▶▶▶▶▶▶▶	
Build quality	▶▶▶▶▶▶▶▶	
Ergonomics	▶▶▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶▶▶	

## Logitech WingMan Cordless Rumble Pad

Features: Cordless, rumble effects, D-pad, 11 programmable buttons, two analog controller sticks, a slider throttle Price: Rs 4,999 Contact: Aditya Infotech Ltd Phone: 022-26338555 E-mail: sunil\_zarekar@adityagroup.com Web site: www.logitech.com

This Rumble Pad was the only wireless contender in our tests. It is quite heavy but this doesn't affect the game-play or strain you. The analog sticks are extremely smooth and responsive. The throttle is placed just above the right trigger button and provides a good response.

The pad uses 2.4 GHz radio frequency signals and can be used from at least 20 feet away. It showed absolutely no lag time and bundles four AA Duracell alkaline batteries. The installation is effortless and the provided software takes care of the calibration and button-programming.

This one offers the best features, albeit at a price—Rs 4,999.



Logitech Cordless Rumble Pad		B+
Features	▶▶▶▶▶▶▶▶	
Build quality	▶▶▶▶▶▶▶▶	
Ergonomics	▶▶▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶▶▶	

# Logitech WingMan Gamepad

**Features:** Excellent tilt motion sensor, 11 programmable buttons, one D-pad, one macro button, USB interface **Price:** Rs 2,999  
**Contact:** Aditya Infotech Ltd **Phone:** 022-26338555  
**E-mail:** sunil\_zarekar@adityagroup.com  
**Web site:** www.logitech.com

Logitech has carved a name for itself over the years by setting a standard of sorts for all the features a device should have. The Extreme wears stunning blue transparent buttons and D-pad on its black body. The six standard buttons are placed in two rows. A small dual colour LED indicates the status of the tilt sensor. The winning feature is the motion sensor control—the gamepad senses your motion and takes the directional input for the pad. However, the analog controller is sorely missed.

The installation is fairly simple as it supports both, a game port and a USB port. WingMan Profiler, the bundled software, provides a simple graphical interface to program the buttons and calibrate the gamepad as per your preferences. You can even download profiles for your favourite game directly from the company's Web site. It brings along a demo version of *Rogue Squadron3D Elite Missions*.

With good support for game profiles and user-friendly software, this device is more suited to serious gamers, considering that it costs Rs 2,999.

Logitech Extreme						B+
Features	▶	▶	▶	▶	▶	
Build quality	▶	▶	▶	▶	▶	
Ergonomics	▶	▶	▶	▶	▶	
Value for money	▶	▶	▶	▶	▶	
OVERALL	▶	▶	▶	▶	▶	



# Microsoft SideWinder Game Pad

**Features:** Eight programmable buttons, one D-pad, USB interface  
**Price:** Rs 700 **Contact:** Trifen Technologies  
**Phone:** 022-26236061/6226777 **E-mail:** trifen@vsnl.com  
**Web site:** www.microsoft.com

This Microsoft gamepad is dull grey in colour with black buttons and D-pad. The first major difference from the earlier pads is that the sloping body has been replaced by a flat one and the handles have been shortened.

The button layout is similar to the older versions and is tweaked for maximum comfort and efficiency.

The D-pad was the only let-down—it is quite hard, has a very restricted motion and lacks tactile feel. The new features include a mode button and a USB interface; a small green LED indicates the power status.

The sidewinder can be connected to the USB port using its long cable. It does not bring along any software, taking for granted that every user will be running Windows 98 or the Me operating system. The installation is quite hassle-free and the calibration can be done from the game controller settings in the control panel.

The price tag is the real clincher—the gamepad costs only Rs 700—a package hard to ignore.

Microsoft SideWinder		B+
Features	★★★★★	
Build quality	★★★★★	
Ergonomics	★★★★★	
Value for money	★★★★★	
OVERALL	★★★★★	



## Logitech WingMan Rumble Pad

**Features:** Rumble effects, two analog stick controllers, a slider throttle, 11 programmable buttons, one D-pad **Price:** Rs 2,599  
**Contact:** Aditya Infotech Ltd **Phone:** 022-26338555 **E-mail:** sunil\_zarekar@adityagroup.com **Web site:** www.logitech.com

The Logitech WingMan Rumble Pad is just the old Logitech joystick with a few enhancements in a different moulding. The first thing to catch the eye is the well-spaced layout of the buttons and controllers.

The buttons need a firm push to work, but the analog sticks are very accurate, smooth and responsive. The slider throttle was a bit loose and lacked the stiffness, but offered good control over the throttle, especially in flight simulators. The rumble effects can be toggled by the rumble button. The mode button can be used to switch between the analog and digital mode.

The rumble effects were appropriately stimulated by every game detail. It can be connected using the long cable to a USB port and does not support a game port. The installation and calibration was a breeze with the accompanying WingMan Profiler utility.

This joystick is priced at Rs 2,599, which is quite reasonable for a feature-rich device.

Logitech WingMan Rumble Pad					A-
Features	▶	▶	▶	▶	▶
Build quality	▶	▶	▶	▶	▶
Ergonomics	▶	▶	▶	▶	▶
Value for money	▶	▶	▶	▶	▶
<b>OVERALL</b>	▶	▶	▶	▶	▶



# Microsoft SideWinder Plug and Play Game Pad

**Features:** USB interface, six programmable buttons, one D-pad  
**Price:** Rs 700 **Contact:** Trifen Technologies  
**Phone:** 022-26236061/6226777 **E-mail:** trifen@vsnl.com  
**Web site:** www.microsoft.com

This SideWinder gamepad is the most basic offering from the software giant. The first thing to hit you is the unusual design—the body shell is made up of hard plastic with strips to make it stiff that create a striation effect. The build quality is sturdy with no squeaks even after a good thrashing. The body is slightly tilted on either side, with the D-pad on one side and the four buttons on the other. The triggers are placed just under the control of your first finger and they provide an excellent tactile feel.

This SideWinder features an eight-way D-pad, four programmable buttons and two triggers. Surprisingly, the D-pad does not provide good control in all directions due to a slackness in its operation. The buttons are placed well within the reach of small hands and the triggers offer precise control. This is a plug-and-play USB device that gets automatically detected once the drivers are installed. What makes this product an excellent buy is the fact that Microsoft has taken every small detail into consideration to offer a very comfortable device for just Rs 700.

Microsoft SideWinder Game Pad Plug and Play		B+
Features	▶▶▶▶▶	
Build quality	▶▶▶▶▶	
Ergonomics	▶▶▶▶▶	
Value for money	▶▶▶▶▶	
OVERALL	▶▶▶▶▶	





## Saitek P220 Digital Pad

**Features:** Eight programmable buttons, one D-pad, a digital throttle button **Price:** Rs 990 **Contact:** Origin Marketing Pvt Ltd  
**Phone:** 022-28801335 **E-mail:** origin@vsnl.com  
**Web site:** www.saitek.com

The Saitek P220 Digital Pad looks similiar to the Sony PlayStation One consoles. The D-pad is a round button with four snouts and a dedicated digital throttle button is present in the centre, above which four LEDs indicate the increase or decrease of the throttle. The pad is too light for its own good.



The buttons and the D-pad are silver in colour and make a striking contrast to the grey body. The feel of the D-pad and the buttons is fairly good but they tend to feel a bit cramped. The throttle response is not very linear and the increments in jumps are jerky. The trigger buttons are well-placed but need a firm push to work.

The device uses a USB interface and also comes with a long cable. The calibration can be done via the game controller options in the control panel, but a driver must be included for utilising its full potentials, such as programming the buttons.

Saitek has made the product half-heartedly, without much thought for aesthetics. Costing Rs 990, it does have some chances, mainly from the economical aspects.

Saitek P220 Digital Pad <span>B</span>	
Features	▶▶▶▶▶
Build quality	▶▶▶▶▶
Ergonomics	▶▶▶▶▶
Value for money	▶▶▶▶▶
OVERALL	▶▶▶▶▶

## Typhoon Cyber Motion 3D

**Features:** Tilt motion sensor, eight programmable buttons, one D-pad, a ring throttle, a USB interface **Price:** Rs 1,200  
**Contact:** Hitech Computers **Phone:** 022-24927323  
**E-mail:** bom@hitechit.com **Web site:** www.anubisline.com



The Cyber Motion 3D Gamepad comes with in-built sensors that respond to the directional input of hands. It has a silver grey colour combination, while the D-pad, buttons and throttle are jet black. The handles are long enough for a giant and the buttons are perfectly placed. The ergonomics is spot-on with all control placed in the right place. The buttons are tear-drop shaped and placed right under the right thumb. One of the most innovative features was the centrally-placed throttle, which is a rubberised ring and has almost thrice the throw of any other device we tested. This is very important since you get a very linear throttle response, as you can increase the throttle in small increments.

It can be installed using either the USB interface or the game port adapter. The provided drivers take care of the remaining installation; the calibration can be done through the game controller options in the control panel. You can adjust the sensitivity of the motion sensors and the other controllers.

Cyber motion 3D is an excellent buy if you want a gamepad with fairly good sensitivity at the price of Rs 1,200.

Typhoon Cyber Motion <span>B+</span>	
Features	▶▶▶▶▶
Build quality	▶▶▶▶▶
Ergonomics	▶▶▶▶▶
Value for money	▶▶▶▶▶
OVERALL	▶▶▶▶▶

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AD



# All the **software** you'll ever need\*

There's a common perception that anything that's provided free is useless or just not up to the mark, or simply redundant. We do agree that, in general, there's nothing called a free lunch. However, our experience with free software on the Net has made us think again. But first, let's take the case of your close friend who gives you a gift on your birthday. Would he or she ever think of giving anything less than something that's of value to you? Software developers are a strange lot. They may not be your close friends but they act as one. Whether you need a free OS, free database, free Web server, free image-editing software, free audio or video editor, free tweaking tools, free browsers, free download accelerators, free Java or Perl scripts, and so on... They simply keep churning it all out. Since sifting through the multitudes will be a herculean task for any individual, our team has done this task for you. We believe that if you have these software on your desktop, you will not need anything else. The proof of the pudding lies in the eating. So what are you waiting for?

*\*and it's FREE!*



ILLUSTRATION: Mahesh Benkar



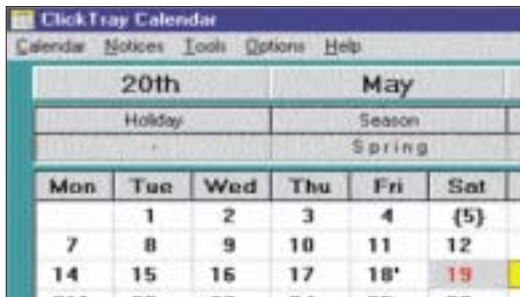


# Home

Free goodies on your home PC should include a calendar, a dictionary and a thesaurus. This, of course, does not mean that we did not think of music and audio. We simply packed all that stuff in the Multimedia category to show you how valuable home entertainment is. But there are plenty of other things you can do. We thought you might want to send an electronic greeting card to someone you treasure. There's a cool tool towards that end. There's also software to make you organise your day. Best of all, if the weekends bring out the novelist in you, try to publish an ebook. We, at Digit, promise to be your first readers

## ClickTray Calendar

A calendar, address and reminder program—all in one. This is what ClickTray Calendar is. It has a user-friendly interface and can be activated from the system tray. Now you can use almost unlim-



Manage your tasks with ClickTray Calendar

ited notes, colourise each day individually, enter repetitive tasks, and much more.

This release also provides alarms, a notice overview, a calendar printer, and an address book. The new features include automatic holiday calculation, text book, categories in the To Do List, a wider interface and a new design. A birthday and anniversary list has also been added.

Size: 2.59 MB

## WordWeb

WordWeb is a free cut-down version of WordWeb Pro. It includes a comprehensive English thesaurus and dictionary, and can be used to look up words from within most programs.

Simply type in your word and press the search button—one frame displays the definition, the other shows synonyms, antonyms, type of, types, part of, similar and attributes.

Size: 4.6 MB

## FreeCard 2.0

Ah! It's your girlfriend's birthday. You've still not sent her a card. She's

going to be mighty annoyed. Don't panic. You can still send her an electronic card—that too a jazzy one at no expense. You can use FreeCard, which lets you create electronic greeting cards with graphics or video, text, music and sound to send with e-mail or on diskettes.

FreeCard takes standard Windows bitmap (BMP), video (AVI), MIDI music (MID), WAVE sound (WAV) material files and creates multimedia e-cards. Each created e-card is a self-contained, standalone Windows executable (EXE) file. This program creates very compact e-cards (starts at 70 KB)—ideal for sending by e-mail or from Web sites. It includes a Watermarking utility for embedding, identifying and linking information to your graphics and video materials.

Size: 0.534

## NATATA eBook Compiler

If you want to create an eBook, you can try getting started with Natata eBook Compiler.

It makes the process of creating an eBook very easy—just go through all the tabbed windows, choose configuration features and navigation controls, and then hit 'Compile'.

You can use it to compile eBooks, offline Web pages, HTML photo albums, presentations and more.

There are a few nifty things you can do with this eBook compiler. For instance, you don't have to re-type all your settings each time you want to create a new version of an eBook. Simply save all your settings and open your project at any time you wish. The interface uses a step-by-step approach that guides you through the process of creating your compiled file. Additional features include password protection,

print disabling, custom messages and icons.

Size: 1.23 MB

## Advanced File Organizer

Calling for a file from your computer, which your boss needs urgently, is often a time-consuming task. Especially if you had stored the file without applying much thought. Here's a professional—the Advanced File Organizer—to help you streamline this chore. It's a powerful, yet easy-to-use cataloguing utility that helps you find the location of any file stored on a removable media or on your hard drive in a matter of seconds.

The program can work with all kinds of media recognised by Windows as drives: CD-ROMs, DVD-ROMs, Memory Stick cards, ZIP disks, floppies, hard drives, network drives, etc. This utility organises files and folders into a hierarchical tree and lets you handle archive files as ordinary folders.

The program features powerful search capabilities and has a built-in reporting tool that lets you create and print reports that summarise information about the indexed media. You can also export search results to the CSV format and analyse them with MS Excel or other tools that recognise this format. This is a free-to-try version.

Size: 1.17 MB



Advanced File Organizer: Locate files in a jiffy



## Internet

What are the essential ingredients of a rich, entertaining and fulfilling Net experience? Permit us to spell it out for you by anticipating your needs. You hate filling forms. You desperately want to avoid spam. You want to know more about alternatives to Internet Explorer and Netscape, and are yet unaware of offline browsing software. You want to know which are the cool download managers and want to expand your Outlook to other e-mail clients. You want to engage in simultaneous and instant chatting with all your friends, and are overwhelmed by the plethora of bookmarks and URLs. You want to know more about file-sharing programs and lastly, want to kill those irritating pop-ups. We have the right stuff you need. Read on...they're Free!

### Crazy Browser

What can you expect from a browser that is less than 1 MB? Sounds crazy? Maybe that's why it's named so. Whatever, it can do a lot. Crazy Browser is a fully multithreaded Web browser and it means that you can open several Web pages simultaneously in one session. It is customisable, providing options for changing the way Crazy Browser looks and operates.

This version can handle multiple

monitors and has tab status indicators. Annoying ad windows can be removed automatically and multiple pages can be saved and reopened together.

This browser has full support for P3P privacy policy and zone-based security assignments. You can turn loading of multimedia data on/off with a single click. And you can make it your default browser. Not a very crazy idea.

Size: 0.699



Crazy Browser supports XP themes, P3P privacy and JavaScript error suppression

## Essentials



### Acrobat Reader 5.1

You simply need to view PDF files. Version 5.1 includes capabilities that will enable e-

government initiatives, and the ability to validate signatures and open file attachments from directly within Acrobat Reader. Also, when windows are resized, text in tagged Adobe PDF files is rearranged to fit the window for better onscreen reading.

Size: 8.6 MB

### DirectX 8.1

DirectX is a technology that enables higher performance in graphics and sound when you're playing games or watching video on your Windows PC. DirectX helps experience better 3D graphics, immersive music and audio effects on your computer. It plays a role in many functions, including 3D rendering, video playback, still and motion capture, TV Viewing applications, joystick and mouse interfaces, networking for multiplayer games and lots more.

Size: 19.1 MB

### IE 6.0 + SP1

This latest release includes an Advanced

Search bar, an Image Toolbar for quickly and easily saving images in e-mail or from the Web, and the Contacts bar which allows MSN Messenger Service members to use instant-messaging features from within the browser window while they surf the Web.

The Media Bar provides a simple user interface for locating and playing media within the browser window. IE 6 includes Outlook Express which has added some security features. You can now block any executable attachments, compressed files, or Visual Basic Scripts, commonly associated with e-mail viruses.

Size: 128 MB

### Irfanview 3.80 + Plugins

Irfanview 3.80 is an image viewer and converter. It is a 32-bit graphic viewer for Windows 9x/Me/NT/2000/XP. It is the first graphic viewer with multiple (animated) GIF support, multi-page TIFF support, and multiple ICO support. It also includes support for Apple Quick Time. A plugin is available for Windows Media Player support.

Size: 4.3 MB

### JRE 1.4.1

The Java Runtime Environment is a subset of the files included in the Java Development

Kit (JDK). It does not include the compiler, the debugger or related tools. Instead, it provides the minimum runtime for Java technology-enabled applications (that is, the JVM, JFC, JIT and supporting files).

It provides a Java compatible environment for today's popular Web browsers. It enables users to direct applets or JavaBeans on their Web pages. That translates to consistency and reliability when running applets. Other features include full Java 2 SDK Standard Edition v 1.3 support, full Java compatible support, a future-ready architecture and a Java Plug-in Software HTML Converter.

Size: 7.64 MB

### QuickTime 6

This latest release of Apple's digital media software for both Mac and Windows-based computers delivers good quality for creating, playing and streaming audio and video content over the Internet. With support for MPEG-4 Video, MPEG-4 AAC Audio and all earlier supported formats, Apple is revved up. The new QuickTime 6 Instant-On tool starts playback without waiting for buffering and the Skip-Protection technology makes video and audio streaming on the Web noticeably faster and smoother.

Size: 10.5 MB



## Netscape 7.01

**N**etscape 7.01 incorporates Mozilla features selectively. It includes tabbed windows and a one-click search. The tabs sit just below the menu bar and let you switch among unlimited open Web pages. In addition to high-speed browsing and instant messaging capabilities, Netscape features Quick Launch, which reduces the browser startup time; and improved instant messaging, including support for Buddy Icons, file transfers, and Buddy Alerts.

Size: 30.8 MB

## Opera 7.01

**O**pera is a fast and very popular alternative browser to Microsoft and Netscape. It's quite versatile and includes a newsreader. You can run multiple windows even at startup and special features are included for users with disabilities.

Its user interface has received a major overhaul, with a new startup dialog, new

default buttons and skins, and panels in a blue and white colour scheme that can be changed back to the classic Opera look or another design. It handles non-standard pages using DHTML.

Opera now offers one-click login to password-protected sites. Changing the look of a browser has never been easier with Opera's new one-click skin install. For keyboard-lovers, Opera makes it possible to navigate entirely with keyboard shortcuts. Its mail client automatically categorises and sorts e-mail messages, has an integrated spam filter and supports POP3, IMAP and ESMTTP.

Size: 12.6 MB

## Naviscope 8.7

**N**aviscope is a nice compact utility that helps you browse faster. It achieves acceleration through five advanced techniques: prefetching, DNS resolution caching, persistent connections, MTU/RWIN optimisations and advertisement blocking. In addition to blocking advertisements, Naviscope can also block cookies, backgrounds, blinking text, Javascript and sounds.

Naviscope has a popular SiteMapper that allows you to navigate a Web page before your browser even displays it. Using Naviscope, you can perform Internet diagnostics, obtain Web site registration information and even stop individual objects from loading.

Size: 0.614

## Eudora 5.2

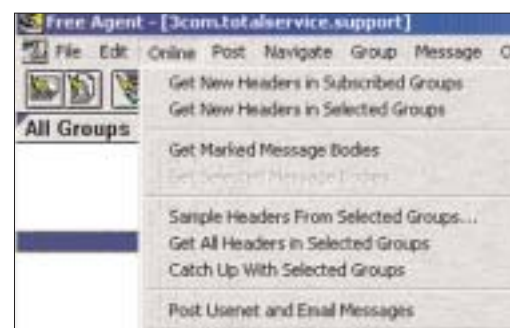
**T**his e-mail client is available as a full-featured free version, but you have to put up with ads in the interface's lower-left-hand corner. It has a nice feature called MoodWatch, which analyses messages on the fly, and rating them on a flame scale from ice cube to three chilli peppers. You can see the rating as you type, and you'll be warned before sending that the message might be offensive. Eudora also includes a way to send voice messages via e-mail as well as very powerful filter and search features. Eudora 5.2 features even greater filtering to protect users from aggressive quantities of junk mail.

Size: 6.13 MB

## Free Agent

**F**ree Agent is a free newsgroup reader that provides multipane viewing, and

news can be read online or offline. Other features include flexible article purging, database compacting, carbon copying for e-mail and article posting, editing of all fields, and cancelling of posts.



Get the relevant newsgroup postings with Free Agent

One of Free Agent's best features is the ability to extract information from another newsreader during setup so that the user doesn't have to input the same information over and over again.

Additional features include quick find, send mail, word wrap, quick purging, and automatic 'catching up'. With Free Agent v1.93, several essential features have been added, including improvements in overall speed, database compression, and database purging.

Size: 2.29 MB

## WebStripper

**W**ebStripper is an offline browser that allows you to copy Web pages or entire sites to disk for viewing offline. It retains the HTML links, which you would otherwise lose if saving from the browser. It is fast and allows you to download many items at once. The program offers several options to filter what is downloaded by file type/size including a 'text only' option.

Additional features include the ability to only download new or updated pages, keep a 'What's new' list, a file explorer and more.

Size: 1.74 MB

## JetLinks

**J**etLinks manages Internet bookmarks, links, URL collections or favorites. Features include multiple browser compatibility, system-wide hotkeys, XML-based storing of bookmarks in separate files, URL and link import from HTML, plain text and open browser windows. Jet Links has a highly-configurable user

## RealOne Player 2

RealNetworks' RealOne Player 2.0 is a playback tool for all major media formats. It includes high-quality video playback, a music jukebox, a 10 band graphic equaliser, a built-in Web browser and an improved radio tuner function. It plays well on all Windows flavours, but you need a plugin to create WMA files. The latest release features Universal Playback, so you can play QuickTime or Windows Media Player content encountered while surfing within RealOne's integrated browser.

Size: 7.97 MB

## Windows Media Player 7.1

Microsoft Windows Media Player 7.1 consists of seven features in a single application: a CD player, an audio and video player, a media jukebox, a media guide, an Internet radio tuner, a portable device that you can transfer music files to, and an Audio CD burner.

It adds Windows Media Audio 8 (WMA8) encoding, Windows Media Audio and Video 8 decoding, new smart transcode support for high-quality transfer to portable devices, and other enhancements and bug fixes. It should not be installed on computers running Windows 95 or Windows NT 4.0.

Size: 9.94 MB

interface and complete online help in HTML help format.

This version features advanced handling of duplicate URLs with the new alias mechanism, and partial support for Netscape 6. Many bugs have been fixed, making the program stable on Windows 9x platforms.

Size: 2.49 MB

## Pop-up Stopper 2.9

You can stop pop-up windows with this latest upgrade. There is no need



Say no to pop-up windows

to adjust proxy settings, or add sites to a list. The user settings allow various pop-up notifications, such as a flashing icon or new, fun sounds. Simply press the [Ctrl] or [Shift] key to allow selective pop-up windows, but most new links should now open automatically.

Pop-up Stopper is not advertising supported, nor does it require registration, and no information is collected from or about product users.

Size: 0.454 MB

## Spybot-Search & Destroy 1.1

SpyBot-S&D searches your hard drive for so-called spy- or adbots—that is, little modules that are responsible for the ads that many programs display. Many of these modules also transmit information, including your surfing behaviour on the Internet. If SpyBot-S&D finds such modules, it can remove them. It also removes usage tracks, which makes it more complicated for unknown spybots to transmit useful data. The list of last visited Web sites, opened files, started programs, cookies, all that and more can be cleaned.

Spybot-S&D also contains some routines to find and correct invalid entries (regarding links left over from software

uninstalled long ago, for example) into the registry.

Size: 2.31 MB

## Spinner Plus

Spinner Plus is a free Net music player that gives you access to more than 350,000 songs that are categorised into more than 140 channels of music. Spinner Plus operates independently of a browser—no additional software or plugins are needed. It also features 21 channel presets, a preset mouse over feature that lets you know what's playing on other channels, extensive keyboard and toolbar controls, skins, and an animated display. Other features of Spinner Plus include complete artist, song and title information, and the ability to purchase CDs directly from within the player.

Size: 2.62 MB

## Windows Media Stream Recorder

Windows Media Recorder allows you to record streaming video and audio clips from the Internet and save them to your hard drive so you can play the clips from your computer without the interruptions inherent in Internet connections.

Media clips can be recorded while browsing the Net or from Windows Media Player play lists. The program detects the beginning, the end and names of the media such that multiple clips can be recorded automatically. It supports Microsoft Windows Media Player video and audio stream formats.

Size: 0.28 MB

## AI RoboForm

If you hate filling Web-based forms, AI RoboForm does just that. It is a password manager and one-click Web form filler with serious Artificial Intelligence inside. It memorises online passwords, automatically logs you into a Web site, generates random secure passwords, fills registration forms from identities, encrypts sensitive information using DES, prints a list of your passwords on paper, and allows easy backup and restoring of passwords.

You also can set up the program so it only fills out part of a

form, leaving you flexibility to manually enter values for a few fields. Finally, the program also saves your user IDs and passwords.

Version 5.0 is a major upgrade with about 20 major changes and more than 100 small changes.

Size: 0.608 MB

## Cloudmark SpamNet Outlook

Cloudmark SpamNet Outlook add-in saves you time and frustration by stopping spam automatically. The program runs invisibly in the background of your e-mail program. All you need to do is delete the spam from your own inbox.

Just like a P2P file sharing network, SpamNet allows you to share the spam you receive with a global database that blocks those messages before they arrive in your inbox. Version beta 6e features improved handling of critical and non-critical Outlook errors, better ability to process large numbers of incoming messages, and other enhancements and bug fixes.

Size: 1.6 MB

## Trillian 0.74

What if you could chat with all your friends simultaneously, especially if one is on Yahoo!, the other on MSN and the third on ICQ? Trillian does just that. It lets you simultaneously connect with Yahoo! Messenger, MSN Messenger, ICQ, mIRC, and AIM. By importing your passwords, buddy lists, various client preferences and other chat specifics into its own simple interface, Trillian acts as a single hub for all your chat traffic.

You can check supported e-mail accounts with a single click, view detailed event logs for each client and, of course, chat your brains out. Plus, there are individual options for each supported chat client. Trillian supports skins too, but they could be easier to install. Version 0.74



Stay connected with Trillian



includes bug fixes and other minor enhancements.

Size: 2.4 MB

## ICQ Pro 2003a

This latest release includes ICQphone, a feature that incorporates IP telephony functions into the ICQ program. Users can initiate and participate in PC-to-PC and PC-to-phone calls. Users can also use the SMS facility, send wireless-pager messages, view current information on ICQ channels and integrate ICQ with Outlook.

This version allows you to move instantly from the Pro to Lite versions just by clicking 'Switch to ICQ lite' from the Main menu, and the shared ICQ preferences and password make it easy to move between Lite and Pro versions without losing your settings.

Size: 3.79 MB

## MSN Messenger

MSN Messenger is an instant-messaging program that notifies you when your friends are online so you can send messages or chat with several friends at once. It also notifies you when you have new e-mail in your Hotmail account and allows you to access your inbox with the click of a button. At any time, you can see a list of all users who have added you to their lists, and you can easily block them if you choose to do so. MSN Messenger also offers integration with Outlook Express 5.0.

Size: 4 MB

## LeechGet 2002 1.0 .1440

LeechGet is a download manager, that uses a Microsoft Outlook-like user

interface and seamlessly integrates into Internet Explorer, allowing you to easily start and manage your downloads. It also includes a full-featured FTP client to download, delete and manage files on FTP servers.

LeechGet provides automatic down-



Manage your downloads with LeechGet

loading, resuming of broken downloads, download timer, automatic hang-up and shutdown and more.

A built-in Web parser even lets you download a complete Web site inclusive of all images and scripts. LeechGet also provides a history of your downloaded files, sorted by day, week and month. Additional features include a file drop icon and bookmarks.

Size: 2.2 MB

## KaZaa Lite

KaZaa Lite, a file-sharing client, is a slimmed-down version of KaZaa. It is a P2P file sharing application that does not contain any spyware or adware.

Unlike Napster, where file types were restricted to music files, KaZaa Lite allows these shared files to be all sorts of differ-

ent media: audio files, video clips, photos and even software applications. If you have a band, getting your tracks on the KaZaa (FastTrack) network is a great way to get your music known and recognised. Budding filmmakers can have the same sort of exposure.

KaZaa Lite can download single files from multiple users to ensure you get the most efficient use of your bandwidth.

The latest version includes K++, which increases your search possibilities. You can also do multi-source downloads (maximum of 40 instead of eight); find more sources for a download every 4 minutes (instead of 10); and no dll files are loaded anymore.

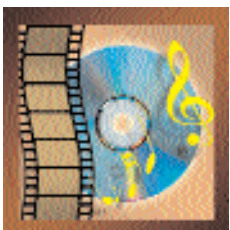
Size: 2.53 MB

## eDonkey

eDonkey is a file sharing program with no central server. It allows you to transfer any type of file with anyone on the eDonkey network. It automatically resumes interrupted transfers from alternate sources. It even introduces ways to share a collection of files together so you can be sure to get all the songs in an album or all parts of a movie.

eDonkey is smart enough to tell the difference between two files, even if they have the same file size and name. This unique file identification also allows you to create links to the files you have, sending them to friends or family, or put them on your Web site, so users who have eDonkey installed as well can download that exact same file from you, or any other user who has it.

Size: 0.865 MB



# Multimedia

Let's admit it. We all love music. But it's one thing to just play songs and it's an altogether different thrill to edit and 'own' them. And so is the excitement of extracting MPEG streams from CD images, converting VCD files to MPEG, correcting MPEG errors, and so on. We promise you that by the time you finish reading this section, you will have the means to fulfil these ends. We have a media player, audio and video editors, codecs to make your life a breeze, and even a data recovery tool to recover data from CD/VCDs if they have gone bad. Now isn't that music to your ears?

## A2 Media Player 2.21

A2 Media Player mixes Sonique's non-traditional interface with Winamp's right-click menus and mouse over help. It features a mixer, an equalizer, skin support,

visualisations, ID3 tag editing and support for PLS and M3U play lists. You'll also find full-screen karaoke emulation with synchronised lyrics and image display, plus system tray transport controls. It can handle audio CDs as well.

It supports VCD, MPEG and AVI video playback. It also supports playback of mixed media files in one playlist. It now has image/video capture and screen capture features, a media file manager for building media libraries to collect, search,

and modify media files, and to copy, move, and delete media files, and a download manager for downloading A2 resources such as skins, language files and demos.

Size: 7.18 MB

## Audacity

Audacity can record sounds, play sounds, import and export WAV, AIFF, MP3 files, and more. You can use it to edit your sounds using Cut, Copy and Paste (with unlimited Undo), mix tracks together, or apply effects to your recordings.

It also has a built-in amplitude envelope editor, a customisable spectrogram mode and a frequency analysis window for audio analysis applications. Built-in effects include Bass Boost, Wahwah, and Noise Removal, and it also supports VST plugin effects. Audacity mixes automatically.

Audacity does not run on Windows 95. Windows 98 or higher is required. If you want Audacity to create MP3 files, you will have to download LAME MP3 Encoder Library.

Size: 1.55 MB

## dBpowerAMP Music Converter 9.0 + codec plugins for different formats

dBpowerAMP Music Converter is one of those must-have utilities for audio-philies. You can use it to convert your audio files from one format to another—just right-click on a file and select Convert To. It lets you rip from audio CDs, edit ID tags and display track info, and record from LPs

(optional install) and tapes. It also gives pop-up information in all supported media files within Explorer. dBpowerAMP Music Converter supports a wide variety of formats through plugins.

We have included the plugins for dBpowerAMP Music Converter that will let you encode audio files into the Ogg Vorbis, WMA 9 and MP3PRO formats. Some of the prominent features of this tool include a skinnable interface, different types of play lists support, three types of controls: normal application window, mini tray control and control bar that sticks to the title bar of other windows and equalizer. Connect it with MP3 burning software such as MP3 CD Converter and you have a complete MP3 solution.

Size: 6.23 MB

## n.player 1.1.0.2

n.player is a small and compact media player with support for several popular formats, including DVD playback. It can play Audio CDs, video, MP3 and DivX with support for subtitles and WinAmp play lists.

It comes with a handy toolbar option that puts the player controls directly into your taskbar. Additional features include auto-skip of DVD intros, free db support, favourites manager, skin support, on-screen display and much more. It requires DirectX 8.0

Size: 1.04 MB

## VCDGear 3.06

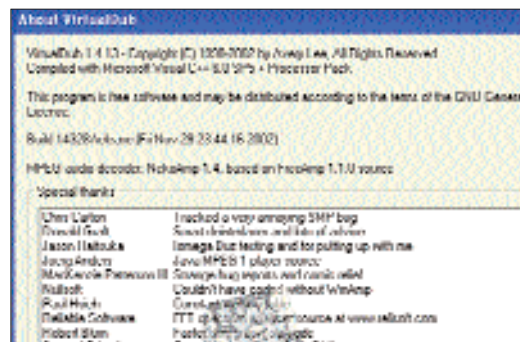
VCDGear is a program designed to allow a user to extract MPEG streams from CD images, convert VCD files to MPEG, correct MPEG errors, and more—all in a single step.

People who need to transport their video materials will find VCDGear as a useful tool to assist them in getting the video to play on their computer or Video CD player.

Size: 1.32 MB

## VirtualDub 1.4.11

VirtualDub is a video capturing and processing program that works with any Video-for-Windows compatible device. It helps you to get video onto your computer by capturing it from a Web cam



VirtualDub: A video editor for 32-bit Windows platforms

or other input device, and also to edit existing video files you may have.

It has batch-processing capabilities for processing large numbers of files and can be extended with third-party video filters. VirtualDub is mainly geared toward processing AVI files, although it can read (not write) MPEG-1 and also handle sets of BMP images.

You can decompress and recompress both audio and video, remove segments of a video clip and save the rest, without recompressing as well as preview the results, with live audio and more.

Size: 0.748 MB

## WMA 9 System Codecs

This contains the new WMA 9 system codecs. This is required if you want to be able to encode into the WMA 9 audio with the WMA 9 plugin.

Size: 3.78 MB

## Xnview 1.50.1

Xnview is used for viewing and converting graphics files. It supports around 360 graphics formats and offers many additional features. You can export around 40 graphic file formats. You can apply filters and effects to your images, import from a twain source (scanner, camera) or use the thumbnail picture browser to explore your image collection.

Xnview also offers a customisable screen layout, screen capture, slide show and much more. You can create contact sheets and Web pages from your images, generate file listings and manage your file by move and copy.

Size: 1.75 MB

## Gazo Digi-Book 9

If you want your album to come alive, Gazo Digi-Book is a must-have. It

### The Dark Side of Downloading

Music, games, e-books, software. There's plenty available for the taking on the Net. But beware; you may be downloading more than you asked for. Downloading may not only help placing the software on the desktop but also something extra in the form of viruses, Trojans, spyware and stealware—a new name given to products that modify affiliate-tracking codes in order to change the person to whom the payment is due.

Always download from reputed sites as they make it part of their process to eliminate malicious downloads. To further eliminate dangers, always run a good anti-virus software to screen what you download.



enables you to display and manage photos in a virtual album, using a virtual bookshelf interface.

The photos are displayed as thumbnails and you can add text and sound comments to each image. It allows simple drag and drop to create new albums. You can also import images directly from your memory card or other media devices.

The current version provides automatic launch systems that allow you to import and create albums just by plugging your digicam to your PC. It has the ability to read and export most image formats. Slideshows can even be made into screen savers.

It offers printing functions that allow you to print images as a catalog, and Web page export functions to allow you to share your albums. The Album Viewer Export functions will publish your albums for friends and family.

**Size:** 2.86 MB

## UndercoverXP

**U**nderCoverXP is a program to easily print CD covers. It supports JPEG, GIF, PNG and BMP formats and can automatically scale front covers, back covers, front and inside inlays, DVD boxes, Playstation covers and CoolBela LD001 labels to the correct sizes. Other label types can be added via a configuration file. The program is easy to use and uses a visual display to show the selected images as they will appear on your cover.

**Size:** 0.692 MB

## IsoBuster 1.2

**T**he name is quite misleading. Neither does this nifty tool bust anything nor is it an ISO (quality) standard. It is, in fact, a data recovery tool used to recover data from a CD/DVD even if the latter has scratches or errors on it. It can read ISO files of many formats, and can extract video from VCDs to MPG or convert DVD to MPEG. Besides fixing the bugs in the earlier

## 7 Tips for Downloading

- ✓ Always use a download manager.
- ✓ Create a directory for only downloads and sort them under different sections as per your need (songs, software, games, etc).
- ✓ Save the file to the disk rather than opening it directly by clicking on the 'Save to disk' option.
- ✓ Scan the file with a good anti-virus engine. Try and integrate the virus-scanning program with the download manager.
- ✓ Try and choose the closest FTP server from where you can download.
- ✓ Disable any screensaver that is on.
- ✓ If possible, try and use a firewall to block unwanted traffic.

er version, this release features a full surface scanning function to find missing/deleted files on a UDF-written CD-R, CD-RW, DVD+R, DVD+RW, DVD-R and DVD-RW.

**Size:** 2.2 MB

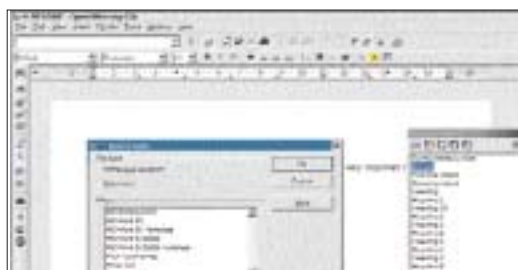


## Office

Since most of us spend our waking time in the office, we thought it wise to arouse your interest in alternative office suites that pack in a host of features for free. It will force you to think differently. Don't take our word for it. Try it out yourself. We are also sure that you would need to plan and jot down notes, so there are the colourful stickies for you. We understand the growing need for instant exchange of notes, documents and the urge to conference. So we have squeezed in a collaboration tool for you. Last, but not the least, there's an alternative to Notepad.

## OpenOffice 1.0.2

**A** free alternative to Microsoft Office and Star Office. OpenOffice.org includes key desktop applications, such as a word processor, spreadsheet, presentation manager, and drawing program, with a user interface and feature set similar to other office suites. The current release, 1.0.2, is a 'micro' release that incorporates many bug fixes. It can import and export different types of documents and templates in a huge range of formats from HTML to MS



*OpenOffice: a multi-platform office productivity suite*

Office XP. It runs on all modern operating systems, except Mac OS X.

The Autopilot feature guides you through creating complex documents. The OpenOffice.org Writer is a word processing and document layout program. You can compare changes and work collaboratively using the Versions system. You can connect with external e-mail software. AutoCorrect word completion speeds up your writing in a non-obtrusive and powerful way. Indexing functions make moving around inside a document easy. It also has a Desktop Publishing (DTP) functionality that allows you to display everything you want simply and clearly.

DRAW gives you the tools to work with graphics and diagrams, though not as good as other image-editing programs. FontWork allows you to work with 2D and 3D images from text for an extra effect.

**Size:** 50.85 MB

## NoteTab Light 4.92

**A** free alternative to Notepad, NoteTab is light in resources and heavy in features. It includes a handy HTML editor. It can handle many files with a simple tabbed interface. It can search files, strip HTML tags and format text quickly. It allows you to write with the font of your choice, fixed-width or proportional. If you need to cut and paste from a pile of files, you can set up a Paste Board file to save text clips automatically. You can use the system-wide search and replace tools and you can speed up your work with text macros.

Version 4.92 fixes some issues that were introduced in the previous release.

**Size:** 1.8 MB

## Stickies

**S**tickies is a virtual post-it notes program that allows you to place sticky notes on your desktop, which will remain where

placed until closed, even if you reboot your machine. The appearance of the sticky notes can be customised. In addition, the notes can be sent across a network and also synchronised with friends, imported/exported, sent by e-mail and more.

Size: 0.47 MB

## Project Planner - PE 2.0

**P**roject Planner - PE lets you manage your projects and allows your team members to modify their task status online in real time. It also gives you control over the schedule as well as the expenditure on your project along with a risk log. Using the built-in metrics features, Smartworks lets you predict the slippage in terms of cost/schedule for your project.

Size: 5.12 MB

## Above & Beyond 2000

**A**bove & Beyond 2000 is an easy-to-use APIM that features a unique Dynamic

Planning technology. It's suitable for single users and workgroups. The Split Task option schedules time for projects, allowing for dependencies such as prerequisites.

Additional features include prioritising, alarms, pop-up calendars, agents, workload balancing, filters, timers, contact databases, autodial, time accounting, case number, expense and mileage reports, Web site connecting, custom fonts, colour printing, world time zones, LAN scheduling, a meeting maker, password protection, and encryption.

Size: 1.59 MB

## Microsoft Netmeeting 3.0

**N**etMeeting delivers a complete Internet conferencing solution for all Windows users with multi-point data conferencing, text chat, whiteboard, and file transfer, as well as point-to-point audio and video. (Refer, 'Getting it Together' on page 114 for more details)

Size: 1.57 MB

## Sprat 1.1.0

**S**prat is an easy-to-use custom database builder. Use the many features to create your perfect database. It even has a variety of options for working with a created database. With Sprat you can create custom database tables in an easy-to-understand environment. Information can be added, edited or deleted simply by clicking a button. You can choose to print, preview, or format for HTML the output. There is even a find stats button that includes regression.

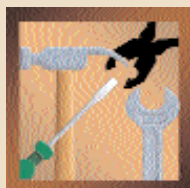
Size: 3.9 MB

## Acropad PDF Creator 1.0

**T**his simple utility looks like a copy of Notepad but it actually saves to the PDF format. You don't need Adobe Acrobat. Simply open the text or RTF file, select the line feed, page properties, font, and other options, then save it as a PDF.

Size: 0.315 MB

## Developer Tools



### Bloodshed DEV C/C++ 4.0

Bloodshed Dev-C++ is a full-featured Integrated Development Environment

(IDE) for the C/C++ programming language. It is able to create Windows or console-based C/C++ programs using the Mingw compiler system or the Cygwin compiler. It can also handle the Insight Debugger. Included in the Dev-C++ environment are all of the standard features necessary for writing, compiling, debugging, and executing programs written in C. Strictly for the hard-core C++ programmer, Dev-C++ allows you to compose all of your source code without many of the hand-holding features and expenses included in many of the available programming environments.

Size: 7.5 MB

### JCreator v2.50 LE

JCreator is a powerful IDE for Java. JCreator provides the user with a wide range of functionality such as project management, project templates, code-completion, debugger interface, editor with syntax highlighting, wizards and a fully cus-

tomisable user interface.

JCreator is written entirely in C++. Its features include pop-up code completion, pop-up code snippets, pop-up code identifier, source code navigation, integration of the Javadocs, Debugger Interface, custom document types, Class Wizard and Interface Implementation tool.

Size: 2 MB

### GLUT binary + source code

GLUT is the OpenGL Utility Toolkit for writing OpenGL programs. It provides a portable API so you can write a single OpenGL program that works on both Win32 PCs and X11 workstations. GLUT is designed for constructing small to medium-sized OpenGL programs.

GLUT is simple, easy, and small. The GLUT library has both C, C++, FORTRAN, and Ada programming bindings. The GLUT source code distribution is portable to nearly all OpenGL implementations for the X Window System and Windows 9x/NT.

Size: 12.577 MB

### IndigoPerl V2003.02

IndigoPerl is a binary build of Perl, Apache and PHP for Windows. It includes an integrated Apache Web server and can be used

for developing and running Perl scripts and Web applications. A browser-based GUI Package Manager for installing Perl modules is included. You just need to unzip and run setup. IndigoPerl is provided as a zipped file with a Perl script installer.

It can be installed on all Win32 systems. It does not install files in windows directories, nor does it keep data in registry, except for Apache service information. Multiple versions can be kept on same PC.

Size: 19 MB

### Java 2 Development Kit 1.4

The Java 2 Development Kit lets you write Java applets that conform to the latest applet API for Java. Previous versions added new functionality to Java, including accessibility, drag-and-drop, application services, a Java extensions framework, collections, input methods, version identification, reference objects, the Java interface definition language (IDL), the Java Virtual Machine Debugger Interface (JVMDI), Java servlets, and Javadoc doclets.

Performance enhancements include native thread support, memory compression for loaded classes, faster memory allocation and garbage collection, monitor speed-ups, and a native library JNI port.

Size: 37 MB





# System

What's the first thing you'd do after selecting a software? Install it. So we've given you installers that do things the right way. You obviously need an anti-virus scanner. We have it. You may want to recover lost files, take backups, tweak your registry, secure your privacy, check what you have on your system or extend your clipboard memory. You may also want to install a firewall to prevent intruders from hacking into your system. Besides, an event scheduler, a macro-maker, file-splitter, and file renamer make life so easy. You wonder why you never had them on your PC before. That's why we've got these for you.

## Microsoft Windows Installer

If you are apprehensive of harming your computer by installing new software, try out the Microsoft Windows Installer—an installation and configuration service that ships as part of the Microsoft Windows 2000 operating system.

It restores the original state of the computer upon installation failure. It keeps track of all changes made to the system during the application installation process. If the installation fails, Windows Installer can restore, or roll back, the system to its initial state.

Size: 1.62 MB

## UninstallAbility 1.0

If you want to get rid of unwanted programs, try UninstallAbility, which ensures that you will always be able to uninstall unnecessary programs from your computer—even if your Add/Remove list of installed program has gone corrupt or even lost.

UninstallAbility maintains backup copies of the uninstall list. It can also help you when a program you want to uninstall has disappeared from the uninstall list, but not from your computer. The program can perform automatic backups, daily, weekly, etc and also keep multiple versions of the backup set.

Size: 0.551 MB

## Apache 2.0.44

A very popular Web server on the Internet since 1996, Apache is a high-quality, open-source HTTP server for modern OSes including the UNIX and Windows families. It provides a robust and commercial-grade reference implementation of the HTTP protocol. It supports Dynamic Shared Objects, which allows for modules to be loaded at runtime. The server includes an experimental digest authentication module, an expat XML parser and enhanced support for Tandem, TPF and Mac OS.

Size: 4.76 MB

## HTML Kit

HTML Kit is a full-featured text editor designed to help HTML, XML and script authors to edit, format, validate, preview and publish Web pages. Newcomers to HTML coding can benefit from the program's error-catching abilities. Experts can save time spent on common tasks, using the customisable and extendible editor, while maintaining full control over the code.

HTML Kit can be integrated with HTML Tidy, a utility for analysing and correcting errors in HTML and XHTML files.

Size: 2.84 MB

## HTML Reference Library

The HTML Reference Library (HTMLLib) is a Windows HLP file (available in Windows 3.x and Windows 95 versions) which details with numerous screenshots and example code, how all currently useable HTML elements can be employed for the creation of Web pages.

Size: 3.12 MB

## PHP 4.3.0

PHP is a widely used general-purpose scripting language that is especially suited for Web development and can be embedded into HTML.

PHP can be used on all major operating systems, including Linux, many Unix variants (including HP-UX, Solaris and OpenBSD), Microsoft Windows, Mac OS X, RISC OS.

Size: 5.8 MB

## Python 2.2.2

Python is an interpreted, interactive, object-oriented programming language. It has very clear syntax, modules, classes, exceptions, very high-level dynamic data types, and dynamic typing. New built-in modules are easily written in C or C++.

Python runs on Windows, Macintosh, Linux, Unix, OS/2, WinCE, and many other

operating systems. The full source code is available for the language and associated standard libraries. Key features of Python include object orientation, modular name spaces, exceptions, and multi-threading; high-level dynamic data typing and very late binding; tight integration with C, C++, and Java modules; may be compiled to Java byte code for use in any JVM; string and regular expression processing; extensive XML and web services support; GUI development and multimedia services; unit testing, profiling, and documentation generation; and restricted execution security option.

Size: 6.92 MB

## MySQL 3.23 + Control Center

MySQL is a very popular open source database. The latest version 3.23 is now declared stable which means that MySQL 3.23 can now be safely used in production environments. This release includes full-text search, replication between a master and many slaves and several new table handlers that support large files and transactions by using the Berkeley DB library from Sleepycat Software to implement transaction-safe tables. It now has full-text indexing and searching capabilities.

Size: 16.2 MB

## AntiVir PE

**A**ntiVir Personal Edition detects and removes more than 50,000 viruses. The resident Virus Guard serves to monitor file movements automatically. It comprises an on-demand scanner for Windows and for DOS, on-access scanner for Windows, Scheduler, Internet update program and



AntiVir PE: The bug killer

Support Collector. AntiVir adds a scan menu item to the Windows Explorer context menu of directories and files. If this feature is disabled during the installation, you will be able to scan only entire drives but not single directories or files using the Windows on-demand scanner.

If you have installed an earlier version, do remember to uninstall it before installing this new version.

Size: 3.75 MB

## ZoneAlarm 3.1.395

**Z**oneAlarm provides PC protection for the home user. It installs easily, and a simple setup wizard helps you configure standard Web applications, such as your e-mail client and Web browser, to access the Web without the need to fiddle with port addresses or proxy settings.

When other programs or processes attempt to access your Internet connection, a window pops up that prompts you to permit or deny access.

The latest version adds several features including in-client logging, which provides log filtering, sorting, and real-time analysis; new AlertAdvisor, which offers instant security advice; zone management area, which lets you easily share files with computers and networks you trust while simultaneously blocking ones you don't; an all-new user-friendly interface; and much more. Other updates include improved interoperability with proxy server applications, an improved user interface with a new maximise/minimise button.

Size: 3.6 MB

## EasyMTU 3.0

**S**peed is what we want to get from the Internet. We never seem to have enough of it. EasyMTU helps speed up your Internet connection by optimising your TCP/IP settings. Windows has default settings for TCP/IP that may be optimal for a networked PC, but not for a standalone connected to the Internet with a modem.

EasyMTU lets you quickly change the Registry settings to optimise your modem speed on a standalone PC with a dial-up connection. It changes your PC's MaxMTU to coincide with your router's MaxMTU for maximum performance. It even includes a benchmark program that lets you compare the throughput for different settings.

EasyMTU also contains a unique FindMTU utility and a benchmark for comparison between different settings.

Size: 0.357 MB

## juv16 PowerTools 1.2.0.181

**J**uv16 PowerTools is a full set of tools to keep your computer up and running. It is a registry and system-tweaking tool from the same developer that released the popular RegEdit utility. It contains all the tools needed for monitoring, cleaning and controlling the Windows registry, the file system and your Local Area Network.

The juv16's interface is split up into three sections—the Registry Tool, the File Tool and the LAN Tool. The many features include cleaning the add/remove software list, scanning the registry for invalid and obsolete registry entries, start-up control, searching for duplicate files, finding broken shortcuts and much more. LAN features include chat, remote task manager, run programs on a remote machine and more.

There's version 1.3 in the offing which has added a few console commands—there are now 216 of them. It has a lot of bug fixes and other small improvements.

Size: 2.05 MB

## Backup4all 1.0

**B**ackup4all is a full-featured backup tool, which will allow you to define custom backup configurations to meet your personal needs.

Backup4all also enables you to see what files have changed since the last backup and to preview the statistics for the next backup. Additional features include zip compression, Explorer integration, incremental backups and more. Backup4all works with any drive letter, including mapped network drives, CD-R/CD-RW media and UNC paths.

The backup speed has improved with the latest release. An option to minimise on tray was added. A new option is made available for hiding the background image on the left side of the application's main form. You can now add individual files to the backup source and not just to the folders. The Shutdown problem which occurred with Windows 2000 has been corrected. There is now a visual indication for backups that are currently executed.

Size: 1.124 MB

## PC Inspector File Recovery 3.0

**P**C Inspector File Recovery is a data recovery program with support for FAT 12/16/32 and NTFS file systems. It recovers files with the original time and date stamp, and can optionally restore them to a network drive and can recover many files, even when a header entry is no longer available. On FAT systems, the programs find partitions automatically, even if the boot sector or FAT has been erased or damaged.

The current version 3.x replaces the previous version. It finds partitions automatically, even if the boot sector or FAT has been erased or damaged (it does not work with the NTFS file system). It recovers files with the original time and date stamp. It supports the saving of recovered files on network drives. It recovers files, even when a header entry is no longer available. The 'Special Recovery Function' supports a host of file formats.

Size: 2.81 MB



PC Inspector automatically retrieves recoverable files



## SequoiaView 1.3

Ever wondered why your hard disk is full? Or what directory is taking up most of the space? When using conventional disk-browsing tools, such as Windows Explorer, these questions may be hard to answer. SequoiaView, however, uses a visualisation technique called cushion treemaps to provide you with a single picture of the entire contents of your hard drive. You can use it to locate those large files that you haven't accessed in one year, or to quickly locate the largest picture files on your drive.

Treemaps make more efficient use of the available screen space. Instead of showing a file system as a long list of files and directories, files are displayed as rectangles, with the size of the rectangle being proportional to the size of the file. The program also allows you to apply different colour schemes to easily identify certain file types.

Size: 0.554 MB

## Super Tray Info 2.2

Super Tray Info is a small and simple system information utility that runs in the system tray and provides one-click access to various system information, as well as your current IP address.

You can get information about all your drives (total size, free size, usage); CPU informations (CPU usage [%], vendor [AMD, Intel, ...], MMX support, 3DNow support, cache informations [L1 and L2] ); drive information (free space, total space, usage [%], volume, serial, file system [FAT, NTFS, ...] ); memory information (total memory, free memory, memory usage [%]), display information (type of adapter, current resolution, number of colours);



Access your system information in just one click

## Making Sense of the Software Licenses

**Free Software:** Free software is a matter of freedom, not price. You can use, copy and distribute it in its original form or with modification for free or with a fee, provided the source code is provided with it. The GNU General Public License (GPL) is an example.

**Freeware:** The software is available for free and can be distributed freely in an unmodified state. In case the source code is provided, you need permission from the original developer to modify and redistribute it.

**Shareware:** Also called liteware, this is usually available free for a limited trial period, after which the developer requires you to register and pay a licence fee. Shareware may have certain features disabled or there may be constant reminders to register.

**Adware:** This type of license given to software comes with a banner or a pop-up ad. Even though such software is available free, you'd have to register with the developer to ban the ad.

**Nagware:** Something in the mould of a shareware program, this type of licensing presents the user with one or more pop-up windows or alerts when an application is launched or closed (sometimes both), reminding the user to register, purchase the application, or take some other action. Nagware is commonly used with shareware programs that have been downloaded for trial use.

**Trial Version:** This type of licensing allows you to use the software for 30 days after which the program will stop responding and you'll have to register.

operating system information (OS type [Windows 2000, XP, 98, ... ], build, system up time, machine name, IP address); default printer, network adapter name, audio adapter name and more.

Size: 0.756 MB

## The Shadow

The Shadow is an event scheduler. It can run any program at the time that you specify, as well as hourly, daily, at startup, shutdown, etc. The program consists of two parts—a small, tray resident program which is started when the system starts up, and an easy-to-use configuration program which you will use to configure and add events.

Size: 0.34 MB

## XOSL 1.1.5

Extended Operating System Loader (XOSL) is a full-featured, free boot manager with an easy-to-use graphical user interface with mouse and keyboard support. XOSL supports up to 24 boot items, as well as automatic booting and password protected boots. Additional features include Hotkey per boot item, Master boot record virus protection, drive swapping, co-existence with other boot managers and more.

You have to create a dedicat-

ed partition before installing the boot manager.

Size: 0.5 MB

## Yankee Clipper III

Yankee Clipper III is a powerful Windows clipboard extender/memory. It handles pictures, richtext, URLs, etc of any size. It features printing, drag and drop, and optional permanent storage of clippings. It can save past 200 text and RTF, 20 BMP and Metafile, and 200 URL clipboard entries. It has a 'Load and Shoot' function to paste text anywhere, and can float on top of other applications for fast pasting. It has no size limits for 'clippings'.

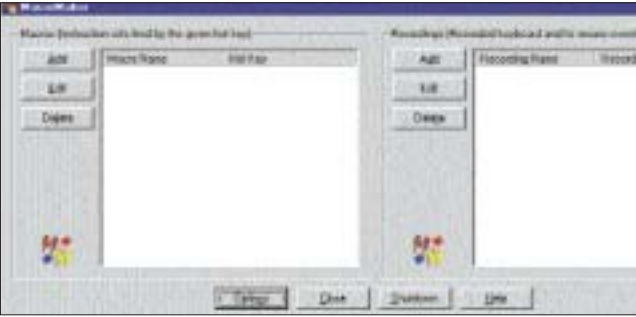
It has a global hotkey to make the application visible when hidden, and another to instantly show and select past 'clippings' without showing the application. The clippings can be dragged and dropped to/from YCIII. It can strip unwanted 'quote' characters ([<], []) from 'clippings'.

Size: 1.04 MB

## MacroMaker 1.0.43

MacroMaker allows the user to build macros and assign them to hot keys. The user can simulate a series of keystrokes, execute built-in functions, or playback a previous recording with just a keystroke.

With the copy and paste functions available, you can feasibly have a clipboard, which can store text only, assigned to every key on the keyboard amongst



An easy way to build macros

other prebuilt functions. You can also store textual content from the clipboard in internal MacroMaker buffers for later use.

Size: 0.244 MB

Gsplit 1.7.0

Gsplit is a powerful file splitter that lets you split your large files into a set of smaller files called pieces. The pieces can be easily combined, using the generated Self-Uniting Executable, that automatically restores the original file for you without requiring GUnite. Gsplit also includes advanced features such as different splitting methods (blocked or spanned disks pieces), CRC32 checks (detects file corruption), splitting logs, keeping file information, creating specific pieces with your own names and shell integration.

Size: 1.14 MB

Flexible Renamer 6.1.5

Flexible Renamer is a powerful file/folder renaming utility, that supports Wildcards and Regular-Expressions. It offers a Windows Explorer style interface and a variety of renaming options,

including options to remove numbers or strings, replace strings, insert numbers, translate letters and much more. You can also use Flexible Renamer to create empty objects in the form of files or folders. It also supports Tag-information such as ID3(MP3), EXIF, IPTC, MS-Office, HTML.

Size: 0.58 MB

Zip genius 1.4.3.1294

Your zipped files are not safe, even if you protect them with a password. That's why ZipGenius offers CryptoZip to encrypt zip files and transform them into Czip files through a numeric key of your choice. ZipGenius has all the functions of a typical compression utility plus some extra features which include 21 compression and

encoding/decoding formats; zip encryption/decryption (CZIP format via CryptoZip); PocketPC support via ActiveSync; Drag and drop support; Customisable look and feel; Grid to separate data; Custom font which can be applied to ZipGenius buttons and menus; 'First Step Assistant' button to drive newbies; and ZipGenius Mail, a built-in e-mail client.

Size: 6.12 MB

Eraser

Beware! Data does not vanish simply because you've deleted a file. The operating system does not really remove the file from the disk; it only removes the reference of the file from the file allocation table. Eraser uses the 'Darik's Boot and Nuke' (DBAN) disk option to erase all your hard drives.

Eraser deletes encrypted Files and Drives; erases FreeSpace on Windows 95/98/NT/2000 and XP; erases contents of the Recycle Bin; erases Internet Cache; appears as an 'Erase' option on the Context Menu of Windows Explorer and Recycle Bin; comes with an Eraser Scheduler that allows you to create user-defined tasks; and supports FAT32 and NTFS File Systems.

You can drag and drop files and folders to the on-demand eraser, use the Explorer shell extension or use the integrated scheduler to program overwriting of unused disk space or, for example, set browser cache files to happen regularly, at night, during your lunch break, at weekends or whenever you like.

Size: 1.77 MB

PGP 8.0

Everybody wants to exchange messages securely. Encryption is the buzzword in this game of maintaining privacy. The standard in encryption today is PGP or Pretty Good Privacy. It is a powerful cryptographic software suite that enables people to securely exchange messages, and to secure files, disk volumes and network connections with both privacy and strong authentication. In addition to secure messaging, PGP also provides secure data storage, enabling you to encrypt files stored on your computer.

PGP 8.0 allows only the encrypting of e-mail and does not include plugins for e-mail clients. The PGP 8.0 source code is available for download; the license allows review only, not reuse.

Size: 8.44 MB

Commercial Anti-virus: It Pays to Put Your Money on Them!

The game of one-up-man ship between virus makers and virus catchers is an ongoing one. Though there are free and trial versions of anti-virus software that do a pretty decent job of keeping your system safe from common viruses, you'd need a feature-rich, versatile tool to bust the slimier ones that have developed a higher resistance to general anti-virus techniques. And these come at a cost.

If you are constantly online, it is wise to go for a paid version of anti-virus software, as these provide you more complete protection from existing as well as emerging viruses. Some of these commercial software are available for trial, so do try them out and see which one suits you best.

Name	Web site	Features	Size
Norton Antivirus 2003 Professional edition	www.symantec.com	Live updates, script blocking, scans IM attachments and incoming/outgoing mail	38.3 MB
McAfee Virus Scan 7.0	www.mcafee.com	Script blocking, integrated firewall, tightly integrated into MS Office and Windows	41.1MB
Panda Antivirus Titanium	www.pandasoftware.com	Automatic updates, Smart-Clean technology to repair files	15.4 MB
PC Cillin 2003 v10	www.trendmicro.com	Integrated firewall, download/browser/file sharing/IM attachment scanning	16.5 MB



# Bazaar

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

## Dell OptiPlex SX260

Sleek and powerful

The OptiPlex SX260 desktop computer from Dell has an ultra small form factor and is quite well-built. It sports a black body with a silver-grey front panel, which houses the power button and hard drive LED. The system comes with the option of mounting brackets for attaching the system underneath the table. This helps save desktop space considerably as there is only the flat panel monitor, keyboard and mouse on the desk.

This machine is primarily targeted at the corporate business user. It is powered by a Pentium 4 2.0 GHz processor that is upgradeable to 3.06 GHz and 256 MB DDR RAM that can be upgraded to 2 GB. The other goodies include Hitachi's 40 GB 5,400-rpm hard drive, a removable and hot-swappable floppy drive and 8x DVD-ROM

drive (which means that you can plug in the floppy drive or DVD-ROM drive without shutting down the machine), onboard sound, six USB ports and an Intel Pro 1000 Gigabit Ethernet card. It also has Intel Extreme Graphics, which is not only sufficient for most business applications such as 3dsmax and Autocad, but will also satisfy the casual gamers

who don't mind sacrificing on features to get higher frames per second.

The OptiPlex performed well for its configuration. It managed to encode a 50 MB WAV file to MP3 using Audio-Catalyst in just 29 seconds.

For video encoding, this system took 2 minutes 54 seconds, which is on par with any similarly configured system. However, in spite of having a 5,400-rpm hard drive with the 3.5-inch form factor used in laptops, it showed scores similar to that of a

front, the onboard 845 graphics core registered 96.1 fps at a resolution of 640x480, which puts it in league with the GeForce MX 400.

The system is also very easy to maintain and is high on security measures. It shows an alert message if the cover is removed, so you can check if any of the hardware has been tampered with. There is a single green knob at the back panel to open the cover of the PC to access the hard drive. This makes it easy for the user to upgrade the system memory, change the processor and even do some cleaning.

The PC comes complete with Windows XP (plus SP1), drivers CD, Restore CD, manual and a starter's guide. It also comes with two extra covers for the back panel to isolate the connectors from external shocks.

The machine is priced at Rs 1,10,000 which is justified given the performance, design and features that are packed into such a small form factor. The same machine, when



The back panel of the cabinet can be removed for easy access to the components



configured on Dell's US-based Web site, costs Rs 97,500. Its looks and features make the OptiPlex SX260 an attractive option for executives who would like a small, good-looking and yet powerful system capable of handling with flair the applications available today.

### SPECIFICATIONS

Pentium 4 2.0 GHz processor, 256 MB DDR RAM, Hitachi 40 GB 5,400-rpm hard drive, removable and hot swappable floppy drive and 8x DVD-ROM drive, onboard sound, six USB ports, Intel Pro 1000 Gigabit Ethernet card, Intel Extreme Graphics

Price: Rs 1,10,000  
Contact: Dell Computer India  
Phone: 080-5068117  
Fax: 080-5586107  
E-mail: chiradeep\_rao@dell.com  
Web site: www.dell.co.in

Dell OptiPlex SX260		A-
Performance	▶▶▶▶▶▶	
Build quality	▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶	
Features	▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶	

## Canon Digital IXUS 330

A pricey deal

Canon's Digital IXUS 330 is probably the best looking 2 Megapixel digital camera we've seen. Its compact steel-aluminium body has an excellent metallic finish. The package includes a USB cable, Lithium-Ion battery, a battery charger, user manual and CD-ROM with all the drivers, and some photo editing software that will help you get started.

A 1.5-inch LCD screen shows a preview of the image you are about to shoot and allows you to browse through the user interface to change the camera settings. If you turn off the screen, you can use the optical viewfinder equipped with a 3x zoom lens for capturing distant objects. The camera can also be used to record short, 30-second videos at the lowest resolution. The videos can be viewed on a television screen using an AV connector.

The buttons on the camera are well placed and easy to operate. The dial to select the mode of the camera is conveniently placed at the top and can be rotated with the

thumb. There is also a groove at the back for resting the thumb, which helps to get a good grip and take photographs with a steady hand.

The IXUS 330 has excellent features and great compatibility with the PC as well as Canon's photo printer. However, the camera comes bundled with just an 8 MB Compact Flash (type 1) card, which limits its memory. Also, there is no internal memory. Considering this and the fact that it's a 2 Megapixel camera, its price (Rs 39,995) is too steep—you can easily get a 2 Megapixel camera for half that price.

### SPECIFICATIONS

Dimensions 95x63x32 mm, weight 274 gm, CCD sensor, 2 Megapixel maximum 1600x1200 resolution, 3x zoom lens (35-105 mm), playback zoom, 1.5-inch LCD screen, 4:3 aspect ratio, aperture range F2.7-F4.7, 8 MB Compact Flash card, Canon Li-Ion NB-L1H 840 mAh Lithium-ion battery, JPEG storage format



Price: Rs 39,995  
Contact: Canon India Pvt Ltd  
Phone: 011-26806572  
Fax: 011-26807180  
E-mail: brijesh.verma@canon.co.in  
Web site: www.canon.co.in

Canon Digital IXUS 330		B+
Performance	▶ ▶ ▶ ▶ ▶	
Build quality	▶ ▶ ▶ ▶ ▶	
Value for money	▶ ▶ ▶ ▶ ▶	
Features	▶ ▶ ▶ ▶ ▶	
OVERALL	▶ ▶ ▶ ▶ ▶	

## Creative Inspire 6600 6.1 speakers

Big boom!

Creative's new Inspire 6600 speakers are a treat for sound enthusiasts. The set consists of six satellite speakers and a woofer. It has an extra rear centre speaker that gives an amazing audio

realism from DirectSound 3D game titles, Dolby Digital EX DVD movies and digital music. There is a Creative Multi-Surround System up-mix control switch on the subwoofer to create a 6.1

sound field from a Sound Blaster 5.1 soundcard.

The speakers have an aesthetic appeal that adds value to the decor of the room—for a change, the woofer doesn't need to be hidden away. The satellites are slightly larger than speakers made by other manufacturers, but can still be managed easily. The stand for the centre channel speaker is designed specially to be placed on the monitor, so that it won't fall down. An extra replacement stand has also been provided. The satellite speakers are connected to the back of the sub-woofer through individ-

or needed. The bass gives a clean booming sound that fills the room—it is loud without being annoying. The sound effects in games such as *Quake III* and *Grand Prix 4* were reproduced realistically. However, these games will not exploit the full capability of this set with its additional rear centre speaker. The sound effects in DVD movies that support Dolby Digital EX format were reproduced precisely and added an extra dimension to the movie experience. The clarity of vocals and instruments is



ual cables. The connection and setup is simple, as the cables are of different colours, making it easy to trace their path while connecting. The speaker wires are long enough so you can spread them out in a large room for a true surround experience.

We tested the speakers on the new Audigy2 Platinum soundcard. The six satellite speakers offered excellent sound quality without distortion, thanks to the flexible base, which helps dampen oscillations, thus reducing distortion.

The bass was of excellent quality up to pretty high sound levels. The higher frequencies were also reproduced faithfully. The speakers gave refined sound output even at 60 per cent absolute maximum volume. The bass started getting distorted at higher volume levels, but such sound levels would rarely be reached

also noteworthy. The Creative Inspire 6600 is an ideal companion for the Audigy2 soundcard, producing superior accuracy in sound separation across the six speakers. This speaker set will complement other high-end components in your PC (DVD-ROM drive, large screen monitor, 6.1 channel soundcard) if you wish to make it an entertainment station.

### SPECIFICATIONS

Total wattage of 120 W RMS, five 3-inch satellite speakers (8 W RMS each), one 4-inch front centre speaker (20 W RMS), one 6-inch 22 W RMS sub-woofer, electronically contoured satellites with high performance drivers, 6.1 positional audio, 35 Hz-20 KHz frequency range, 75 dB SNR, wired volume/bass control with headphone jack

Price: Rs 9,599  
Contact: Compuage Infocom Ltd  
Phone: 022-23842200  
Fax: 022-23842210  
E-mail: info@compuageindia.com  
Web site: www.creative.com

Creative Inspire 6600		A-
Performance	▶ ▶ ▶ ▶ ▶	
Build quality	▶ ▶ ▶ ▶ ▶	
Value for money	▶ ▶ ▶ ▶ ▶	
Features	▶ ▶ ▶ ▶ ▶	
OVERALL	▶ ▶ ▶ ▶ ▶	



# Epson Stylus C61

## A clear picture

The Stylus C61 offers an excellent resolution of 5760x720 dpi and some new innovations.

It sits pretty on your desk. However, the body is made of plastic and that makes one doubt its ruggedness. It has a parallel port as well as a USB interface for faster and easier connectivity. It

comes with a setup manual, driver CD, a customer contact book, a parallel printer cable and power cable. Unfortunately, a USB cable was not included in the package.

We printed a test photograph at the highest resolution on glossy photo paper—the images were printed crisp with high detail. However, the colours were not reproduced accurately—the yellow was many shades darker, while the blue was a shade lighter than in the original photograph. It took almost 10

minutes to print the test photograph in A4 size and at high resolution—normal for such printers.

The Stylus C61 printed a text page in 17 seconds, but it tended to get a bit noisy when printing documents in the economy mode or when the document contained text and graphics.

It uses Epson's QuickDry inks, which means that there are fewer chances of documents getting smudged.

The printer works on a wide variety of paper and produces excellent photo quality. However, you can get printers that achieve high levels of quality at lower costs.

### SPECIFICATIONS

Piezo printing technology, 5670x720 maximum resolution, parallel and USB interface, 32 KB buffer, A4 size paper capacity, 3.5 kg weight

Epson Stylus C61		B+
Performance	▶▶▶▶▶▶	
Build quality	▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶	
Features	▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶	

Price: Rs 7,495  
Contact: Epson India Pvt Ltd  
Phone: 022-28261515  
Fax: 022-28257287  
E-mail: ramprasad@eid.epson.co.in  
Web site: www.epsonindia.com

# Mercury HT-4500

## Sound speaker

The HT-4500 is a 5.1-channel speaker set and each of the five satellites pumps out 6 watts RMS, while the subwoofer is capable of 20 W RMS power output.

The black satellite speakers are compact and

well-designed, though a tad heavy. The subwoofer has the volume and fade controls on the front, which makes it difficult to access these settings, as subwoofers are generally placed near the feet, with the front face ideally facing a reflecting surface. Another inconvenience is the

power switch located at the back of the



subwoofer. Also, the cable for the front channel speakers isn't long enough for the speakers to be placed sufficiently far apart. The cable connecting the woofer to the soundcard is of the same colour, which can cause some confusion.

The speakers give a good surround sound effect with reasonable clarity for a good home theatre experience and can also be connected directly to a DVD player. The performance in the low and mid frequencies is also good. However, the speakers are not built to listen at full

volume as there is a slight distortion.

If you are looking for a no-frills speaker set that yet gives you good performance, you can put your money on the HT-4500.

### SPECIFICATIONS

5.1 surround, compatible with AC-3 and DTS, DVD and 5.1-channel soundcard, 4500 W PMPO, 6 W RMS for satellites and 20 W RMS for subwoofer, 30 Hz-20 KHz frequency response, RCAX6 signal input, RCAX5 signal output.

Mercury HT-4500		B+
Performance	▶▶▶▶▶▶	
Build quality	▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶	
Features	▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶	

# HP Deskjet 450Cbi

## Mobile printing

The DeskJet 450Cbi is a well-designed mobile printer, weighing only 2 kg. A flap on the top exposes the control buttons and a smooth moving slider on the paper feed tray adjusts to the paper size. A Lithium Ion battery pack at the back gets charged when the AC power supply is connected through the adapter. The supplied HP DeskJet Toolbox monitors the battery as well as ink level. An infrared port, apart from parallel and USB ports, lets you print via handhelds; a slot for type II Compact Flash card allows for Bluetooth connectivity.

It produced sharp text documents when we printed from a Palm handheld device.

When printing via laptop, the quality was good but took a long 25 seconds. The clarity in the combined text and photograph document was superb and even the details on the small photographs were clearly visible. It failed to print photographs at the highest resolution on non-HP photo paper. Though not as good as other inkjets, it is a good buy for those who need to print on the move.

### SPECIFICATIONS

9 ppm black printouts, 8 ppm colour printouts, fast Infrared, parallel and USB interface, up to 4800 dpi optimised dpi in colour text printing

Price: Rs 15,999  
Contact: Hewlett-Packard India Ltd  
Phone: 011-26826000  
Fax: 011-26826053  
E-mail: ashwini-k\_aggarwal@hp.com  
Web site: www.hpindia.com

HP Deskjet 450Cbi		B+
Performance	▶▶▶▶▶▶	
Build Quality	▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶	
Features	▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶	

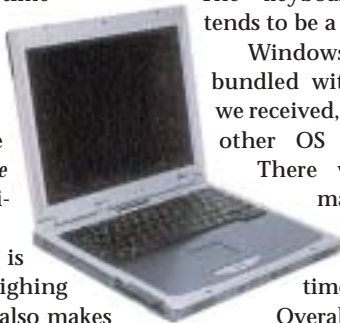
## ACi Emerald Pro

A reasonably-priced gem

The Emerald Pro boasts of a 2.4 GHz Pentium 4 processor and 480 MB RAM. It logged an all-time high of 70.6 in Content Creation 2001 and managed a playable 52 fps in *Quake III* at high quality settings.

However, it is quite bulky, weighing 2.8 kg, but this also makes it tough. The Pro has an easy-to-use glide pad and a TFT LCD screen that is clearly visible even from a wide angle. A Web cam that serves the purpose adequately is placed above the LCD screen. The software to capture video images comes pre-loaded.

There are three USB ports, a parallel port, two serial ports, an infrared port, a FireWire port and an Ethernet



connection. It comes with Realtek Audio'97 soundcard which provides decent sound. The keyboard, however, tends to be a little tacky.

Windows XP came bundled with the laptop we received, but ACi offers other OS options too.

There was no user manual, which might annoy first time users.

Overall, Emerald Pro is an excellent bargain. It may not sport the style of the big brands, but it offers superior performance for business applications at a very reasonable price.

### SPECIFICATIONS

P4 2.4 GHz processor, 480 MB DDR RAM, 15.1-inch LCD screen, 20 GB hard drive, 24x CD ROM, 2.8 kg weight

**Price:** Rs 99,000  
**Contact:** Allied Computer International (Asia) Pvt Ltd  
**Phone:** 022-26733122  
**E-mail:** sales@aci-asia.com  
**Web site:** www.aci-asia.com

ACi Emerald Pro		A-
Performance	▶▶▶▶▶▶	
Build quality	▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶	
Features	▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶	

## beforeSales

For a decent sales pitch

beforeSales is a software built for sales people who can use it to stay updated with the latest status, be it a customer's account or new products in stock.

The software comprises two parts—a server software to be installed on one centrally located computer and a client software to be installed on other computers.

The software allows you to manage sales campaigns, targets, products, prospects, accounts, etc. It also includes



features such as holiday management, faxing, making phone calls and the like.

The product boasts of management features for each level in the hierarchy of a typical company. For sales representatives, personalisation management, target management and marketing encyclopedia features are very useful.

At the manager level, it offers target management and tracking, and funnel management, which effectively keeps

an eye on the sales process and helps in improving and enhancing the sales cycle.

The software provides security options so you can give a separate set of privileges to different members. The Membership Management feature allows you to create hierarchies and establish roles and responsibilities for each level. User-level access is maintained by Access Management and the users can be linked to particular branches by the Branch Manager.

A mail client also comes bundled with the package and users can send SMS and

**Price:** Rs 14,900 (for 5 users)  
**Contact:** Questech India Ltd  
**Phone:** 080-25524771  
**Fax:** 080-25524772  
**E-mail:** info@beforesales.com  
**Web site:** www.beforesales.com

e-mail directly through the software—the Configuration Management feature allows you to link the system with SMS providers as well as Web-based e-mail service providers such as Hotmail, Yahoo! and Rediff.

beforeSales is available for Rs 14,900 for five users; you pay an additional Rs 3,000 for every extra user.

### SPECIFICATIONS

A Software CD and a sales toolkit  
**System Requirements:** Pentium III or above, 64 MB RAM, Windows 95/98/NT/2000/Me/XP, CD-ROM drive

beforeSales		B+
Performance	▶▶▶▶▶▶	
Ease of Use	▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶	
Features	▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶	

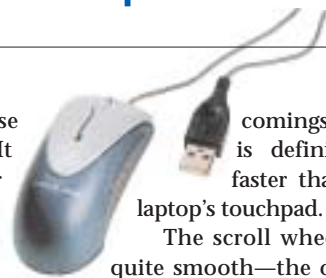
## logear GME221 USB Optical Mini Mouse

Easy and fast

The GME221 is a mouse for the mobile user. It comes with a smart leather carrying case, a user's guide and a three-year limited warranty.

The mouse looks very attractive in its metallic blue and silver case and is very light, weighing approximately 60 grams.

The mouse has two buttons and a rubber scroll wheel. It is easy to manoeuvre but might feel a little too small in your hands if you are accustomed to the size of the regular mice. Its small size also means that it takes some effort when one has to alternate between the right and left-click. In spite of all these short-



comings, it is definitely faster than a laptop's touchpad.

The scroll wheel is quite smooth—the optical sensor senses the movement 1,500 times per second, providing smooth precision tracking on any surface.

However, the price of Rs 2,500 is a big negative—you can get a decent optical mouse for desktop PCs for about one-third the price.

### SPECIFICATIONS

Plug-and-play USB connectivity, optical sensor tracks movement 1,500 times per second

**Price:** Rs 2,500  
**Contact:** J.S. Equipments  
**Phone:** 022-23810713  
**Fax:** 022-23860976  
**E-mail:** jse@vsnl.com  
**Web site:** www.iogear.com

logear GME221 USB Optical Mini Mouse		B
Performance	▶▶▶▶▶▶	
Build quality	▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶	
Features	▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶	



# Corex CardScan Executive

For a digital rolodex

The CardScan Executive is a compact colour scanner that will scan business cards and upload their contents into a database on your PC. The device fits snugly in the palm of your hand and is

CD and you're all done.

Once the device is installed, launch the Card-Scan program, simply feed in the cards one at a time and see the software upload all the information, field-wise in to your database in a jiffy.

Apart from synchronising with handhelds and mobile phones, CardScan offers access to CardScan.net, where users can access their business card data-base via any Web browser.

Overall, the CardScan is an innovative product, combining a colour scanner and database management software, however, the price is quite steep.

## SPECIFICATIONS

Windows 98/Me/2000/XP compatible, Scans in colour and monochrome, measures 6.75x4.75x2 inches, connects through USB, can synchronise with handheld devices

Corex CardScan Executive		B
Performance	▶▶▶▶▶▶	
Build quality	▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶	
Features	▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶	

Price: Rs 27,490  
Contact: Net Spider  
Phone: 022-28633514  
Fax: 011-26826053  
E-mail: sales@netspiderindia.com  
Web site: www.netspiderindia.com

# Creative WebCam Pro

Spot the world!

This Web cam sports a very slim design and can be tilted to around 135 degrees and turned on its axis, which allows shots to be taken in any direction. The base stand is designed such that it can be used with desktop PCs as well as laptops—it can hold on to any laptop with a 0.5-inch thick screen.

It has a CMOS sensor, which has a true resolution of 640x480 and can

be further interpolated to 1026x768 using any image enhancing software. It can also record video at a maximum of 15 fps at 640x480 resolution, which is good enough quality for sharing the clip. It supports 24-bit colour, which makes images look sharp and crisp. The pictures are saved as JPEG images.

The Web-Cam Pro can be connected to the PC using the USB connection and



the microphone allows video conferencing.

The camera is pretty simple to install and configure—Windows automatically detects it, but you will need the driver CDs to install the driver. It shows good response to background lighting—the images are clear, showing no grains or haziness in natural light but with low background lighting, the image

Price: Rs 4,499  
Contact: Cyberstar  
Phone: 022-26556178  
Fax: 022-26556181  
Web site: sushilb@cyberstar.net

becomes a bit dark.

Given its features and performance, this camera is a good buy.

## SPECIFICATIONS

CMOS sensor, 640x480 true resolution, 1028x768 maximum interpolated resolution, maximum 30 fps video recording, USB 1.1 interface

Creative WebCam PRO		B+
Performance	▶▶▶▶▶▶	
Build quality	▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶	
Features	▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶	

# Zoltrix Cool Disk - 128 MB USB pen drive

The pen is mighty

In today's data centric world, we crave for devices which are easy to use, fast, portable and can hold more data. One such device is the portable 128 MB USB storage pen drive, named Cool Disk.

The drive uses Flash RAM technology and the package includes a leather cover, a neck sling, a USB extension cable and driver CDs. The drive gets detected in Windows XP/2000 and the drivers are loaded automatically, whereas for Windows 98/Me the drivers are provided in the accompanying CD. One interesting feature of the drive is that you can use it as a bootable disk if your motherboard supports USB device booting.

The drive can be password-protected for safekeeping. To prevent the data from being accidentally overwritten, it also has a write protect switch similar to floppies.

Price: Rs 5,500 for 128 MB  
Contact: Kunhar Peripherals Pvt Ltd  
Phone: 022- 56345758  
Fax: 022-56345859  
E-mail: salesbom@kunhar.com

On the performance front, the disk takes around 5 minutes to transfer 128 MB of data. However, it does seem to be a bit slow compared to USB drives. Being a Flash RAM drive, data integrity and reliability is quite high.

Priced at Rs 5,500, this 128 MB drive offers good value for money—other such drives cost nearly Rs 2,000 more for half the capacity.

## SPECIFICATIONS

128 MB capacity, Windows 98/SE/Me/2000/XP, USB power supply (4.5 V to 5.5 V), USB 1.0/1.1 interface, data retention of over 10 years, available in capacities ranging from 32 MB to 384 MB  
System Requirements: IBM PC or Notebook computer with USB port, Windows 98/Me/2000/XP

Zoltrix Cool Disk - 128 MB USB pen drive		B+
Performance	▶▶▶▶▶▶	
Build Quality	▶▶▶▶▶▶	
Value for money	▶▶▶▶▶▶	
Features	▶▶▶▶▶▶	
OVERALL	▶▶▶▶▶▶	

# Tune In

World Cup Fever puts Agent 001 in dire need of a TV Tuner card

The Cricket World Cup is on and that means other modes of entertainment such as playing games, downloading music and tweaking my BIOS would have to take the back seat for a while. But the TV was already being put to use—tearing my family and the other animals from Bush's ramblings was going to be quite a task. But the PC was mine, all mine and all I needed was the right TV Tuner card, a big tub of buttered popcorn and a boisterous bunch of patriotic friends.

Adding TV to your computer is as simple as switching channels when you have Windows 98. I needed to add cable from my TV outlet to the PC and use an adapter to connect the TV Tuner card output to my speaker's input line. The TV cable wasn't long enough and I made a mental note to get a longer cable when I

called upon my friends at Lamington Road.

With a faint idea of the various flavours available, I set out—matching my cash inputs with a good quality card was the name of the game. I could opt for a TV-only solution in the form of an add-on PCI TV Tuner card, or one with a decent 3D Display Card with an extra goodie.

At my first stop, the dealer showed me an 'excellent' AGP card with a TV Tuner onboard—the ATi All-in-Wonder Radeon 9700 with 128 MB of DDR memory—for only Rs 38,000. The AIW 9700 Pro is just about everybody's dream card. You get top-of-the-line 3D and 2D performance, digital video capture, TV Out and PVR capabilities. The AIW comes with output connectors that include S-Video, 1/8-inch stereo audio and an RCA S/PDIF digital audio jack for Dolby Digital audio streams to an external decoder. Audio is now routed to the soundcard through the internal input port. It comes bundled with an extensive software suite (that would save me loads of money if I were to buy it separately) that includes Pinnacle Studio 8.4 SE for video capture, Matchware Mediator 7 to create presentations dripping with rich audio, video, sounds and text, and ATi's own Multimedia Center, which has PVR capabilities, players for virtually everything (Video CDs, CDs and DVDs) and a media cataloguing library.

I mentally calculated how much my kidney would fetch me and considered the left eye too. Better sense prevailed and I decided to save the body parts for the next time I upgraded my processor.

His next best choice was a slightly sober ASUS GeForce2 MX AGP card with an onboard TV Tuner for Rs 8,900. I shook my head and casually sauntered out of the shop.

The next guy was more in touch with reality and the annual income of a technology snoop—he offered me a PixelView TV PCI Tuner card for Rs 2,200 and an Addcom PCI TV Tuner for Rs 2,300. However, I was determined to survey all possibilities before I chose the right one.

The next in line tantalised me with a

Pinnacle PCTV Plus TV Tuner that cost Rs 2,800. Looking around the shop for a while, I asked if I could get any decent VGA+TV solution—out came the Compro VideoMate Cinema. This package comprised a GeForce4 MX AGP graphics card with 64 MB of blazing DDR memory and a Personal Cinema Box—the TV kit and a remote control. The GeForce4

MX is no comparison to the ATi Radeon 9700 AGP card, but saved me a body part by costing

Rs 11,925. It was a step above my existing SiS 6326 AGP card with a meager 8 MB RAM. The whole solution offered pretty good 3D graphics, along with an external TV Tuner Box. The TV Box also offered a nifty video capture facility and video output. A slick black remote control in the box was a very cool add-on.

The shopkeeper eagerly explained the various features of the card, Time Shift being the most impressive among them. This feature allows you to watch a previously recorded program, while recording the current live telecast in MPG format. Considering the size of AVI files generated while recording, this is an excellent feature for those with budget hard drives.

Weighing all the pros and cons carefully, I decided to buy the Compro VideoMate Cinema solution costing Rs 11,995. It gave me a good 3D card and brought the World Cup to my PC. It did turn out to be slightly steeper than what I had bargained for, but the combination package price made the deal seem worthy. I could finally play all 3D games on a bigger screen area such as my 21-inch TV, and watch and record TV programs. Content with the proceedings, I left with my pocket lighter but my heart soaring. Time to watch the World Cup! ■

ILLUSTRATION: Mahesh Benkar



■ A TV Tuner card comes in two varieties—a stand-alone PCI 'daughter card' or as a full-fledged AGP video card.

■ If you already have an AGP video card, then you need to purchase a PCI daughter card. This daughter card should also be a consideration if budget is of importance.

■ External plug-and-play TV Tuner boxes are also available that connect to the PC's Universal Serial Bus (USB) port, though these cards lack some of the features of the internal cards.

■ Select a TV Tuner card with a frequency rate equal to or greater than your monitor. Most new monitors are compatible with 75 to 85 Hz TV Tuners.

■ Choose a model with a remote control for greater comfort.

■ If you intend on using your TV Tuner card as a Personal Video Recorder (PVR) solution, ensure that you have adequate storage space.





A look at ultra wideband, a wireless technology that's faster than Bluetooth and WiFi, has the potential to transmit huge amounts of data very rapidly and can pass through walls, floors and even steel

The average Joe has a small home but a very big appetite for entertainment. All of us would want to zap video images from digital camcorders to our hard drives or personal video recorders without tripping over the cables that connect them. As home entertainment systems become more sophisticated, you will have flat-panel video displays. You would want to hang them like pictures on your wall. Who would then want connector wires to dangle from those beauties?

You must be thinking that we already have Bluetooth and 802.11 wireless technologies to do this. They do a decent job of linking our computers and digital gadgets in the home and office. However, more bandwidth and speed and a low cost is always welcome. It's here that another wireless technology—ultra wideband or UWB—is making waves.

UWB can handle more bandwidth-intensive applications—such as streaming video—than either 802.11 or Bluetooth because it can transmit data about 10 times faster than the typical DSL line, cable modem or 802.11b. It has a data rate

of roughly 100 Mbps, with speeds up to 500 Mbps. Compare that with the maximum speeds of 11 Mbps for 802.11b, called WiFi, which is the technology currently used in most wireless LANs; and 54 Mbps for 802.11a and 802.11g (although both exist on different spectrums). Bluetooth has a data rate of about 1 Mbps.

UWB gives us these extremely high data rates at a lower cost and lower levels of power consumption (making it ideally suited for handhelds and mobiles). But due to Federal Communications Commission (FCC) restrictions, UWB will be used in the home or office over a short distance—up to about 30 feet (10 metres)—and operate at rates of around 100 Mbps. Most UWB devices should operate between 3.1 and 10.6 GHz.

There has been a lot of opposition to UWB on grounds that it would interfere with navigational-guidance systems, radar and satellite transmissions. Big mobile-phone companies even warned the FCC

that UWB transmissions would block telephone calls. Companies developing UWB networking technology maintain that UWB emissions are too low-powered to interfere with other radio signals. It took the FCC three years to approve the use of the technology for commercial wireless networking applications.

At one point, regulators feared that mobile gadgets would interfere with sensitive communications at airports or military installations. What would stop consumers using UWB technology in MP3 players from swapping thousands of music tracks in seconds instead of minutes or even hours?

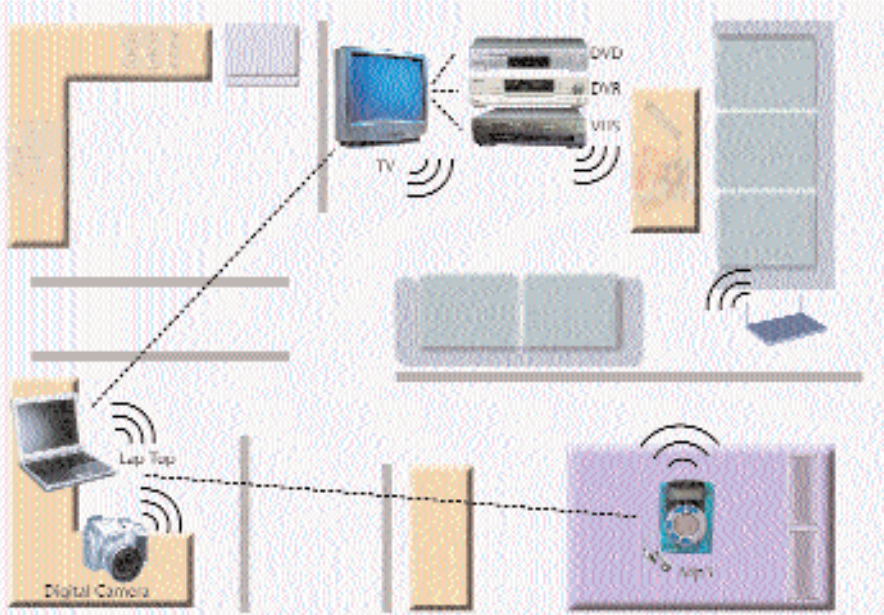
Eric Boll, senior applications engineer, XtremeSpectrum, explains: "Actually, the FCC didn't limit the distance, but limited the power spectral density in the rules approved in February 2002 for commercial use. Under the FCC rules, 10 meters is about the distance that today's UWB technology can operate while staying within the spectral mask."

**Info** The wireless portion of the home networking market is forecast to be \$2.5 billion in 2004, growing to \$3.7 billion in 2006.

// We anticipate commercial applications emerging in the consumer market by Christmas 2003. The first products will be display-centric in nature, such as large screen displays, DVD players, DVRs and set-top boxes that have a wireless capability. In 2004, you will have consumer electronics products with embedded UWB capability //

—Eric Boll, senior applications engineer, XtremeSpectrum

## A "mesh" networking topology within the home



Ultra Wideband, as the wireless transmission technology used in this architecture, allows for very low-cost and low-power access points within the home. Existing wireless solutions simply cannot meet the cost and data rate requirements of such an access point

Bruce W. Watkins, Pulse-LINK President and Chief Operating Officer, corroborates: "There is no FCC limiting factor of 10 meters—this is a very common misconception. Nothing in the FCC ruling or the world of physics limits the technology to 10 metres." It is the wireless UWB signal modulation techniques used that limits a company's particular implementations of UWB to 10 metres, he adds.

### How UWB works

UWB technology has its origins in espionage agencies in both the US and the former Soviet Union. In the late 1970s, the research of military radar technicians led to the 'ultra wideband synthetic aperture radar', used by spy planes and satellites to see through dense ground cover to locate enemy troops and camouflaged equipment on the ground. It works by showering the target with rapid pulses of broad, low-frequency signals that punch their way through solid objects.

UWB works in a similar fashion. Rather than broadcasting on separate government-auctioned frequencies, UWB blasts signals across the entire radio spectrum. The typical long radio wave is replaced by rapid fire Morse code-like bursts, sending hundreds of low-power (around 50 to 70 milliwatts of power—

ten-thousandth the power of a cellphone) electrical pulses each second, each lasting under a nanosecond.

By varying the pulse timing (*see box, 'Catching the UWB Pulse'*) according to a complex code, a pulse can represent either a zero or a one: the basis of digital communications. Because the signal is so low power and so broadly spread, it is both subject to, and subjects other devices to, little or no interference. Only a UWB receiver that knows the exact pulse sequence generated by the transmitted signal can make use of the information in the signal. To the rest of the world it is just more background noise.

UWB energy pulses operate in the same frequency spectrum as electronic 'noise' emitted by Pentium chips, TV monitors, electric razors, automobile ignitions and fans. This is a huge swath of the spectrum, regulated only by FCC rules on how much power these devices can use.

Low power and the characteristic wide spread of the pulses means the pulses don't use up already crowded chunks of the radio spectrum, today occupied by 802.11b wireless LANs and Bluetooth devices. Hence, UWB would allow a whole new class and volume of voice and data communications that, in effect, wouldn't take up any more 'space' in the crowded radio spectrum.

UWB transmitters and receivers are also said to be simpler to build, run and maintain than those in use today. For UWB, you don't need complex radio frequency converters and modulators. You only need a digital method to construct the pulses and modulate them. This can all go on a single chip.

### How secure is UWB?

UWB promises to be highly secure. It's very difficult to filter a pulse signal out of the flood of background electronic noise with traditional RF scanners. Besides, vendors such as Time Domain are encrypting the zeros and ones being transmitted by the pulses.

Watkins maintains that even if an 'intruder' could find the signal in the noise floor, maintaining precise synchronisation with a series of pseudo-random pulses of energy present less than 10 per cent of the time and less than 500 picoseconds in duration is a monumental engineering challenge.

### Applications

Now that the FCC has given its blessing to the use of UWB technology for wireless networking, companies such as Time Domain and XtremeSpectrum are trying to bring consumer electronics manufacturers on board. Time Domain is already working with more than 24 companies to develop applications for its UWB chipsets.

Leading consumer-electronics firms are expected to begin embedding UWB chipsets into DVD players, VCRs, video-game consoles and home-theatre equipment in the coming years. The home-networking market is expected to reach \$4 billion by 2006.

Last July, XtremeSpectrum demonstrated the extreme bandwidth and 'wire-like' video quality of its new Trinity chipset, a wireless semiconductor solution suited for applications in the consumer connectivity market. Using the popular MPEG2 video format, the company broadcast six video streams to six separate flat panel displays simultaneously across the room using a single UWB connection.

Philips and General Atomic teamed up to produce UWB chipsets that could help the home network run 40 times faster than today's IEEE 802.11b networks. Philips envisions the chipsets that transfer digital content at 480 Mbps between clusters of entertainment or computing devices in the home. These could include digital video recorders, set-top boxes, TVs, and PCs. Last



## Catching the UWB Pulse

The short duration of UWB waveforms lend them some unique properties. In communications, for example, UWB pulses can be used to provide extremely high data rate performance in multi-user network applications. For radar applications, these same pulses can provide very fine range resolution and precision distance and/or positioning measurement capabilities.

These short duration waveforms are relatively immune to multipath cancellation effects as observed in mobile and in-building environments. Multipath cancellation occurs when a strong reflected wave—for example, off of a wall, ceiling, vehicle, etc—arrives partially or totally out of phase with the direct path signal, causing a reduced amplitude response in the receiver. With very short pulses, the direct path has come

and gone before the reflected path arrives and no cancellation occurs. As a consequence, UWB systems are particularly well suited for high-speed, mobile wireless applications. Also, because of the extremely short duration waveforms, we can implement packet burst and time division multiple access (TDMA) protocols for multi-user communications.

As bandwidth is inversely related to pulse duration, the spectral extent of these waveforms can be made quite large. With proper engineering design, the resultant energy densities (that is, transmitted Watts of power per unit Hertz of bandwidth) can be quite low. This low energy density translates into a low probability of detection (LPD) RF signature. An LPD signature is of particular interest for military applications (example, for

covert communications and radar), however, an LPD signature also produces minimal interference to proximity systems and minimal RF health hazards, significant for both military and commercial applications.

Among the most important advantages of UWB technology, however, are those of low system complexity and low cost. UWB systems can be made nearly 'all-digital', with minimal RF or microwave electronics. Because of the inherent RF simplicity of UWB designs, these systems are highly frequency adaptive, enabling them to be positioned anywhere within the RF spectrum. This feature avoids interference to existing services, while fully utilising the available spectrum.

According to one estimate, 20,000 people could talk on UWB cellphones within one square block with no interference.

year, Intel demonstrated a prototype UWB system that can send data at 100 Mbps and says it plans to push the technology to 200 Mbps and then 400 Mbps, and finally to 500 Mbps. At that speed, it will be 500 times faster than Bluetooth and nine times the speed of next-generation wireless LAN systems.

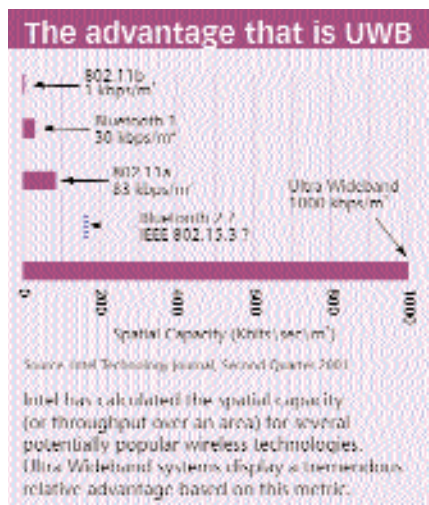
UWB has enough bandwidth to wirelessly network every consumer electronics device in a home from a single access point. This could include the wireless distribution of TV signals (removing the need for cables between set-top boxes around the home), data networking for PCs, PDAs and peripheral devices, home entertainment center components, white appliances, home robotics, home security, baby monitors and more.

Future applications, says Boll, include embedding UWB into battery-powered products such as camcorders, digital cameras, phones, etc so that consumers can wirelessly link images to the UWB-enabled display of their choice, such as a large screen plasma/DLP/LCD, a PC or an actual TV. The ability to embed UWB into a battery-powered device goes back to the low power consumption inherent in ultra wideband.

There will also be UWB-based tracking systems to pinpoint the location of equipment on huge factory floors, find equipment inside hospitals, or locate shipping containers on a dock, among other tasks that are hard for industry to handle now. UWB tracking devices might also be used to guide rescue robots, or even direct lawn mowers.

### What will it lead to?

Comparisons with Bluetooth and 802.11 technologies are inevitable. However, some analysts believe that UWB is actually complementary to these technologies. Bluetooth was originally designed as a technology for wireless headsets and was never intended for multimedia applications that require a high data rate.



Watkins believes WiFi is a great technology for data-centric applications, and that it will continue to be very successful. Ultra wideband, by contrast, is ideal for multimedia, due to its high data rate, low cost and low power consumption, and thus, is intended to serve a portion of the market that is today unserved: wireless multimedia connectivity in the home.

Other analysts feel that Bluetooth is a

low-power option for transmitting data over short distances, but is very slow at less than 1 Mbps. All three members of the 802.11 family consume too much power and are too expensive for battery-powered devices. With UWB having the raw speed to swap video and audio files, Bluetooth would be restricted to a handy wireless-form of 'wiring' for low-data-rate connections between computers and their peripherals. And 802.11b, also called WiFi, is becoming popular for wireless computer networks in homes, offices and public spaces.

UWB technology consumes much less power than 802.11, making it ideal for use in battery-powered devices such as cameras and cell phones. WiFi, in contrast, is limited to PCs and things that you can plug into a wall.

UWB's future will include tracking devices for personal items such as keys and eyeglasses; smarter air bags that precisely locate a seat occupant in order to reduce the risk of injury; dual-mode cellphones that improve efficiency and capacity indoors; hospital communications systems that can locate and transmit data between medical devices; and security nets that spread out like an invisible dome over a home or a car, warning of intruders.

UWB products are expected to hit the shelves in the fourth quarter of 2003. This could include systems to transfer audio and video from a stereo or DVD player or camcorder to other devices. Now that will be an entertaining watch. ■

LESLIE D'MONTE




# Getting it together

Hold virtual meetings across cubicles and verify, edit and pass documents to others without taking your eyes off the monitor!

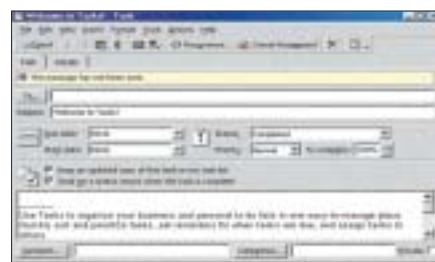
**I**n a world where you need to keep running just to stay in position, and where everything is governed by one catchword—'faster', technology has given us some nifty tools that make it easier to communicate with others and manage work across the office more efficiently and with precision. Here are some tried and tested tricks of the trade that any office of the New Millennium cannot afford to miss.

## Coordinate with Outlook

 Outlook offers some neat collaboration features—apart from e-mail, of course—that will help you share information and work together with your colleagues more efficiently.

You can use the Task and Calendar features in Outlook to coordinate work with others in the organisation. To set a task for a particular day, go to Task and double-click on 'Click here to add new task'. In the window that opens up, you can set the job, its due date and priority, and also gauge its progress. You can even set a reminder. To forward the task-sheet to others, all you have to do is press [Ctrl] + [F] and address it to the individuals concerned or groups.


If you need to delegate a job, set the task as described above and then send it to the person concerned by clicking 'Assign task'. You can keep track of the progress by opting to keep a copy with you by clicking 'Keep an updated copy of this task on my task list' and by choosing 'Send me a status report when this task is complete'.



Assign tasks through Outlook

The Notes facility helps you jot down things in the manner of a sticky note and they can be coloured individually to denote different subjects. You can categorise these notes by the subject such as holiday, business and even forward them to others.

## Spread the word with Microsoft Word

 Microsoft Word too has some inbuilt capabilities to aid collaboration. When different people work on a document, you often end up with as many versions as the number of people involved. However, Word offers several features that help reduce the clutter and confusion.

**Track changes:** One of the easiest ways to keep track of the changes made to a document is through change tracking. Share the document so others can have access to it, or route it through e-mail (see box, 'Routing a Document for Review'). If you've shared the document, click on *Tools > Track Changes > Highlight changes* and



select 'Track changes while editing'. Now any change made to the document will show up as revision marks. Changes made by different users will be marked in different colours and under the name of the machine they make the changes from.

You can even jot down comments on a particular line or portion of the text without actually changing the text. Click on *Insert > Comment* and type your observations. When you are done, the portion of text will remain highlighted and your comment will show up as a little note when the mouse is pointed to the highlighted area. To delete a note made by another user, simply right-click on the comment and choose Delete Comment.

Once all the changes have been done, you can review the final copy and accept or reject the changes (*Tools > Track Changes > Accept or Reject Changes*).

In case you sent separate copies to the people who need to work on a document, you can merge all their changes into one document rather than going through each one separately. Open the original document and in the Tools menu, click Merge Documents. Now open the reviewed copies one by one to merge them.

Thus, multiple users can make changes to the same document, while the final control over what changes get implemented still rests with you. Even if you forgot to enable change tracking, you can still view what changes have been made and accept or reject them. Simply open the edited version of the document and then, under *Tools > Track Changes*, select Compare Documents.

**Versioning:** You can save on disk space and clutter by saving multiple versions of a document in one file. Here Word automatically saves a 'snapshot' of just the changes when you close a file, with a record of the date, time and the name of the person making the changes.

You can manually save versions of the file by clicking on *File > Versions > Save Now*, or you can set Word to automatically save a version when you close the file. For this, click on *File > Versions* and select 'Automatically save a version on close'; click on Close.

Versioning helps you keep track of all the changes and stages the document has been through. To view an earlier version, in *File > Versions*, simply click on the

## Routing a Document for Review

If you need several people to work on a Word document sequentially, so that each person gets to see the comments made by those who have reviewed it before, you can route it through e-mail. Under *File > Send To*, click Routing Recipient and click Address to select the people you want it sent to; click OK. The document will be mailed as an attachment to the first person on the list. After he or she has finished editing it, he or she simply needs to point to *File > Send To* and click Next

Routing Recipient. In this manner, the file will be mailed to people in the order in which their e-mail address has been listed; click Route document to recipient name. The document is automatically returned to you after all recipients have finished with it.

Remember that when routing a document for review, if you add a group address rather than individual addresses, it will be routed to all members of the group simultaneously.

version of the document you want to view and it will be displayed in a separate window. You can even make changes in an earlier version by saving it as a separate file. You may also want to save a multi-

versioned file as a separate file so that viewers can access only the final version. Saving as a separate file also aids in comparing it with an earlier version.

**Document properties:** You can also track a document within the organisation through the Document Properties. This feature allows you to store additional information about a document, other than the

default properties. These include the date of completion, project, publisher, reference, source, status and other details that would aid you in tracking the document. To modify the custom file property, click on *File > Properties* and then click the Custom tab. Next, select the custom property you want to modify, select the type and enter a new value in the Value box. Click on Add to finish.

## Stay in touch with NetMeeting



Meetings are an integral part of any working day, but you can confer with others right

through your desktop, thanks to the Internet and instant messengers. To send a file through MSN Messenger, all one has to do is go to *Action > Send a File or Photo...* and attach the file and click Send.

In addition, you have free utilities such as NetMeeting, an excellent office pro-

ductivity tool that lets you hold virtual meetings, and share ideas and resources across different computers and networks. You can use NetMeeting along with a Web cam to hold a video meeting, or just chat with the people at the other end. The whiteboarding function makes it very easy to share ideas across the network. One remarkable feature in NetMeeting is the ability to share and control programs. This



*The Whiteboard function in NetMeeting opens a separate window where the online meeting participants can type text, draw shapes, copy, paste and delete objects, and highlight or point to text and graphics*

way, you can securely control applications and even the desktop of a remote computer. NetMeeting also lets you securely transfer files to the recipients. Obviously, both parties must have NetMeeting started.

Start NetMeeting, go to *Call > New Call* and enter the IP address of the person you

want to hold a meeting with. Next, from Using, select Automatic, which will set the default values, so connecting will be hassle-free. Click Call. In case your meeting revolves around a particular report or document, use the Share Program icon—to do this, open the document on your

**TIP** Since the tracked changes can be quite distracting as you read the document on screen, you can turn off the option of viewing the changes on screen. Click on *Tools > Track Changes > Highlight changes*. Select 'Track changes while editing', but unselect 'highlight changes on screen'.

**TIP** NetMeeting is tightly integrated into MSN Messenger too, so if you have NetMeeting installed, you can start it from MSN from *Actions > Start NetMeeting*—this allows you to directly switch from the IM to NetMeeting.

## Wise Comments

Microsoft Excel

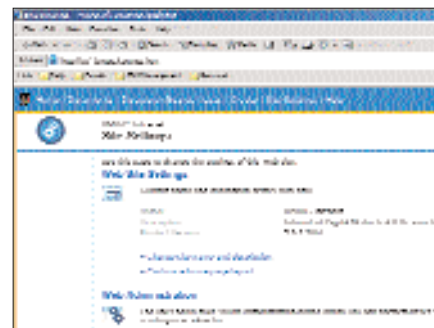
To be able to share an Excel workbook between multiple users, go to **Tools > Share Workbook** and then click on the Editing tab. Check 'Allow changes by more than one user at the same time' and then click OK. When prompted, save the workbook on a network location accessible to the intended users. Remember to use a shared network folder and not a Web server.

Just as in a Word document, comments can also be added to an Excel file. Right-click on the cell you want to insert a comment in and choose Insert Comment. If you don't want your name in the

comment box, select and delete it. When you are done typing the comment, click outside.

Windows PowerPoint

The comment facilities are available in PowerPoint too. Select the slide you want to add your comment to, go to **Insert > Comment** and type your little note. However, you can edit or delete only the discussion comments that you write. To do so, click 'Show a menu of actions' at the end of the discussion comment, click Reply, Edit or Delete and proceed with typing your response to the comment.



Fill the server settings in Sharepoint

participate in the discussion list, the Author level access lets you add and delete pages within the intranet site, while the Advanced Author access can change the intranet URLs.

The members can also vote on a particular topic. Click on Create and choose Survey and create the Survey Options as required. You can then get the other members to respond to that survey and thus take a collective decision on any topic.

And if you want to find if anyone has changed and uploaded new documents, simply go to **Documents > Shared Documents > Subscribe** and under 'Notify me when...', choose 'Anything changes'. Fill in the e-mail address and under Time, choose 'When a change occurs'.



Track changes in Sharepoint

This feature can be used for lists or document libraries. To upload a new document, go to **Document > New Document** and enter the username and password in the network window that pops up. You can also make changes to someone else's document. Say it is a word file, all you have to do is click on **Tools > Track changes > Highlight changes** and selects 'Track changes while editing'.

### All together

With increasingly more casual corporate environments, the offices of the future may exist only in our virtual worlds. Collaboration techniques bring us one step closer to this possibility, allowing teams to function outside the concrete boxes of conference rooms and workstations. ■

toolbar and click Share Program. Now choose the document, click Share and Allow Control. Doing this allows the person at the other end to make changes to the document. (For more tips, refer the Tips and Tricks section.)

### Sharepoint



A virtual office needs a virtual information pool and that's where Microsoft Sharepoint Team Services comes to the rescue. Consider it as a huge room of records where information can be shared, documented, collaborated and collected by the members of the team over the Internet or corporate network. Users can log on, collaborate and use team services through a browser interface for which the administrator has to create accounts for each user on the Sharepoint Team Services server.

Sharepoint Team Services requires Windows XP Professional, 2000 Professional, 2000 Server, 2000 Advanced Server, or 2000 Datacenter Server with Internet Information Services (IIS) 5.0 or later, including Internet service and Service Pack 2 (SP2), Microsoft Data Engine (MSDE) or Microsoft SQL Server 7.0. It

requires Microsoft Internet Explorer 5.0 or Netscape Communicator 4.75. In case it does not detect Microsoft SQL Server, it will automatically install MSDE. All you have to do is create an account in Microsoft SQL Server 7.0 using the installers from the Sharept folder found in your Office XP Professional CD and click on setupse.exe.

The SharePoint Team Services have a mine of features—not only are all your team's resources and work stored in one place using the Document Library feature, but the team can also share ideas and the Subscribe feature alerts the members when the Web site is updated. Inline document discussions make it easy to collaborate on specific deliverables without altering the original documents and discussion boards that serve as a central forum for specific topics and surveys.

Sounds like a complex operation? Not really. All you have to do is create an intranet team Web site while installing. Once you start on this setup page, click Extend, which will direct you to where you set up the virtual server. Here you set up the administrator account and enter the necessary account details with database server name/IP address, a user account and password. Click on Submit to create the Web site, which can be accessed as [http://\(name of the computer, which can be changed later to a desired name\)](http://(name of the computer, which can be changed later to a desired name)).

Then create user accounts for everyone by clicking on Site Settings and set their access levels here. You can set Sharepoint access based on the usage. For example, the basic Browser access level on default installation lets you view all the files. A Contributor can par-

## Sharing Bookmarks

You can share your favourite bookmarks with others by clicking on **File > Import and Export** in your browser. This will start a wizard that will ask you whether you want to import or export your Favorites. Next it will ask for the location from where it has to be exchanged. Once this is provided, it will export/import your bookmarks.



# Your 24-hour finance manager

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

What's the first thing that comes to your mind when you get your electricity, phone or credit card bills? Pay it! Then why are we asking you this silly question? Simply because today you have many ways of paying bills. You could physically go to BSES and MTNL offices, stand in a queue and pay the bills.

Or, you could get someone else to do it for a charge. Of course, you could use phone banking too. The third way is to log on to the Internet and pay them online. And if you choose to do this, or are doing it, then you are one among the 100 million households that now bank online. (See graph, 'Seven-and-a-half years of Web Banking')

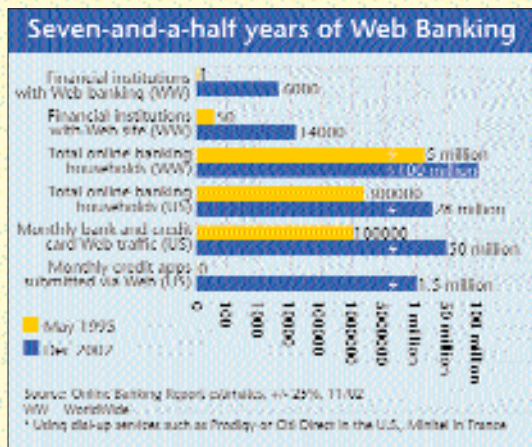
That's not all. You can surf for a loan, life insurance or a home mortgage. You can even trade shares or shop from the comfort of your home. Online banking isn't out to change your money habits. Instead, it uses today's computer technology to skip the time-consuming, paper work of traditional banking in order to manage your finances more quickly and efficiently—it's available 24-hours, there are no queues, convenience and the like.

If you are an account holder at a bank which has a Net banking facility, you are given a Net password. You have to fill out a form

detailing your preferences after which the password is couriered to you. The courier generally contains the user ID, login password and transaction password. For security reasons, users are asked to change the login and transaction passwords after they first login. In some cases, you have to write to the bank to get your user ID enabled. On clicking the login button, your user ID and password generally travel in a secure SSL mode with 128-bit encryption (see box, 'How secure is Online banking?').

## What's on offer?

While many banks offer online banking facilities, most of them do not offer up-to-the-second account information. This means that if a cheque issued by you has been debited from your account in the morning, your account status will not reflect this when you login to your account







OneView from HDFC offers a single-window view of your account status in different banks

in the afternoon. That's because the account is updated at the end of each day.

The features include credit card payment and account statement download. You can update your mailing address and transfer funds between your accounts, even if they are in different branches/cities. You can also open a fixed deposit account online and access its details such as principal balance, term of deposit, rate of interest, maturity date, maturity amount and instructions for payment.

You can issue a Demand Draft (DD) or a banker's cheque from your account at

ping payment.

You can view the status of a cheque issued on any of your accounts, and also request for a new cheque book. If you hold a Demat Account (it is now mandatory that shares be dematerialised, for which you need to open a Demat account) with the bank, you can access your account online. You can thus see your holdings as on the close of the last business day, view your transactions for the last seven days, and check the status of the shares submitted for Demat in the last one month.

Banks such as HDFC and ICICI also

special rates. DDs, however, will generally be issued only where the bank has a branch or an arrangement with a local bank. You can access information on the tax deducted at source (TDS) for all your deposits for the current or previous financial year. If you have a doubt, you can request Stop Payment on a cheque or series of cheques by just entering the cheque number and the reason for stop-

offer the option to purchase goods online. You can shop at Web sites which offer the facility, such as *Sify.com*, *Fabmart.com*, *VSNL.com*. If you purchase any goods online, your account would be debited and the merchant's/Web site's account credited instantaneously (as with Debit cards).

### Online trading

Many of those customers who have chosen to trade shares online today, had at one point of time been trading through offline brokers. For instance, *ICICIdirect.com* claims that more than 1 lakh customers have already opened an account with them for online trading.

There are a few advantages of online trading. In systems where the brokering, banking and Demat accounts are completely integrated, your money remains in your own bank account, and does not get transferred to the broker's pool account. The experience of trading through Internet depends a great deal on the type of product offered by the site.

In the case of *ICICIdirect.com*, your brokering account, bank account and Demat account are linked electronically. So when you punch in a buy or sell order, the system

## The Services Offered Online

A model bank should familiarise the customer to the new Web environment by a demo version of software on its Web site. The demo should contain a tour of the features included. It will enable users to give suggestions for improvements, which can be incorporated in later versions wherever feasible. That only some banks do this is evident from the table below.

The bank should provide services such as account information and balances, statement of account, transaction tracking, mail box, cheque book issue, stop payment, and financial and customised information. In addition, it should also facilitate services such as fund transfers, Demand Draft issue, standing instructions, opening fixed deposits, and intimation of loss of ATM cards.

	Citibank	American Express	Standard Chartered	HSBC	ICICI	HDFC	Global Trust Bank	Bank of India	Corporation Bank
Net banking demo	X	X	X	✓	✓	✓	X	✓	X
Account balance inquiry	✓	✓	✓	✓	✓	✓	✓	✓	✓
Account statement inquiry	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cheque status inquiry	X	✓	✓	✓	✓	✓	✓	✓	✓
Stop payment request	✓	X	✓	✓	✓	✓	X	✓	✓
DD/bankers cheque request	✓	✓	✓	✓	X	✓	✓	✓	✓
Funds transfer	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cheque book request	✓	X	✓	✓	✓	✓	✓	✓	✓
FD inquiry	X	X	✓	✓	✓	✓	✓	X	✓
New FD requests	X	X	✓	X	✓	✓	X	X	✓
TDS inquiry	X	✓	X	X	✓	✓	X	X	X
Leave us an Instruction	✓	✓	✓	✓	✓	✓	X	✓	X
Utility bills payment	✓	X	✓	✓	✓	✓	X	X	X
Depository inquiry	X	✓	✓	X	✓	X	✓	✓	X
Credit card bills	✓	X	✓	✓	X	X	X	X	X
Term loan details	X	✓	✓	X	X	X	X	X	X
128 bit SSL encryption	✓	✓	✓	✓	✓	✓	X	X	X
Help Line (24 Hours)	✓	X	✓	✓	✓	✓	X	X	X



## How Secure is Online Banking?

In a survey conducted by the Online Banking Association, member institutions rated security as the most important issue of online banking. There is a dual requirement to protect customers' privacy and protect against fraud. The software generally used by banks for online banking is secure, tried and tested. Browsers offer from 40-bit to 128-bit encryption. Indian cyber laws too have given legitimacy to digital signatures.

In Netscape versions 3.x and earlier, you can tell what kind of encryption is in use for a particular document by looking at the 'document information' screen accessible from the file menu. The little key in the lower left-hand corner of the Netscape window also indicates this information. A solid key with three teeth means 128-bit encryption, a solid key with two teeth means 40-bit encryption, and a broken key means no encryption.

Even if your browser supports 128-bit encryption, it may use 40-bit encryption when talking to other servers or to servers outside the US and Canada. In Netscape versions 4.x and higher, click on the 'Security' button to

determine whether the current page is encrypted and, if so, what level of encryption is in use.

In the Microsoft Net Explorer, a solid padlock will appear on the bottom right of the screen when encryption is in use. To determine whether 40-bit or 128-bit encryption is in effect, open the document information page using **File > Properties**. This will indicate whether 'weak' or 'strong' encryption is in use.

SSL uses public-key encryption to exchange a session key between the client and server. This session key is used to encrypt the http transaction (both request and response). Each transaction uses a session key so that even if someone did manage to decrypt a transaction, they cannot find the server's secret key. If they wanted to decrypt another transaction, they'd need to spend as much time and effort on the second transaction as they did on the first.

Servers and browsers do encryption ranging from a 40-bit secret key to a 128-bit secret key, that is to say '2 to the 40th

power' or '2 to the 128th power'. In a 40-bit key, you will have to keep on trying each of the  $2^{40}$  possible keys until you find the one that decrypts the message. This was in fact demonstrated when a French researcher used a network of fast workstations to crack a 40-bit encrypted message in a little over a week. An online credit card transaction is completed in a few moments, not giving enough time to crack your password.

Of course, using a 128-bit key makes it more difficult because there are  $2^{128}$  instead of  $2^{40}$  possible keys. Using the same method (a network of fast workstations) to crack a message encrypted with such a key would take significantly longer than the age of the universe using conventional technology. 128-bit is not just 'three times' as powerful as 40-bit encryption.  $2^{128}$  is 'two times two, times two, times two...' with 128 two's. That is two, doubled on itself 128 times.  $2^{40}$  is already a huge number, about a trillion (that's a million, million!). Therefore,  $2^{128}$  is that number (a trillion), doubled over and over on itself another 88 times.

checks the funds/shares availability and automatically credits/debits the accounts once the order is executed by the exchange.

A trader can trade shares on margin at rates as low as 0.10 per cent. It's important to compare various online trading sites on brokerage rates, inclusive of all sub-charges. The tickers available on these sites provide instantaneous updates. Also, some Web sites can offer to transact in those shares instantaneously and with convenience.

Online trade confirmations reach ICICI customers within 4 minutes, while contract notes are dispatched at the end of the day and reach within 24 to 36 hours.

Investors trading online can also do their technical analysis, know what other brokers are recommending—buy or a sell,

access live news from international agencies such as Reuters and CNBC, and find out what the leading CEOs think about the state of the economy and the capital market.

### Are you buying yet?

In India, while the population runs into billions, Internet surfers amount to a very miniscule percentage. An IDC report states that there are almost a million active Net banking users—that might just be 0.01 per cent of the total population, but they represent 15 per cent of the Net user populace.

One expects banks to woo customers to logon and mutually save time and money. In the US, for instance, banks encourage customers to transact online by crediting around Rs 1,250 to them. Paying you money to transact online is a remote thought in India. Just look at the terms of agreement (the small print as usual). They generally read: "...the user hereby fully indemnifies and holds the (Bank) and its affiliates harmless against any action, suit, proceeding initiated against it or any loss, cost or damage incurred by it as a result thereof..."

You will notice that any possible risk (see box, 'How Secure is Online

banking?') connected to online banking is passed on to you. If a hacker manages to crack the password or commit any breach, the customer has to pay even if he was not at fault. In the US, it's not so. Banks cover the risk of hacking and the customer is encouraged to perform online financial transactions.

There are quite a few services missing in the best of online banks in India. They include Online PPF accounts. Many nationalised banks have PPF accounts. If only these were made available online. One would also love to pay taxes online.

Fully functional online banking will take a long time to become as commonplace as automated teller machines (ATMs). And then, virtual banks can't give you cash for which you have to go to an ATM. Also, some banking Web sites can be difficult to navigate at first. Besides, a lot of fine print needs to be checked.

However, for many people, the biggest hurdle to online banking is learning to trust it. Did my transaction go through? Did I push the transfer button once or twice? While the government, banks and financial institutions can do their bit in educating the public, on our part, we need to take a first step—that is, get an Internet banking facility. ■



You can trade online at Sharekhan.com

# 30 Minutes Expert

## Fortify that Screen Saver

We know that Windows 98 isn't exactly Fort Knox when it comes to security. But even today, it continues to power the majority of desktop computers. However, it does offer a crude one-stop defence mechanism in the form of the Screen Saver password. With a few simple tweaks, it can be used quite effectively to cover up some of Windows 98's inherent security flaws.



### Setting the screen saver password

Right-click on an empty area of the Desktop and select Properties from the drop down menu. Now choose the Screen Saver tab and select a screen saver of your choice. Click the 'Password protected' tick box and then click on 'Change...'. This will open up a dialog box where you will be prompted to enter a new password. Remember to follow the usual safety guidelines while picking a screen saver password: don't use simple keywords such as your name or initials. This is important as the Screen Saver password allows for an infinite number of retries and an easy password has a higher probability of being 'guessed' out. You will see a 'The password has been successfully changed.' message after you've typed in your new password. Click OK to finish.



### Activating the screen saver on demand

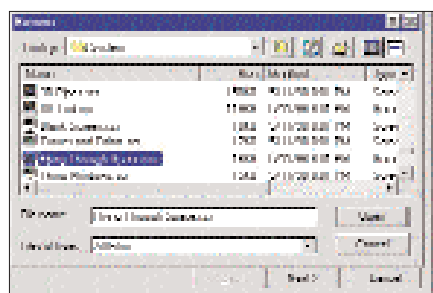
A screen saver only starts up if the computer is idle for a predefined period of time. But you can also invoke the screen

saver on demand by creating a shortcut for it and then assigning it a hotkey.

Right-click on an empty area of the Desktop and select New and then Shortcut. This will open the Create Shortcut dialog box. Click on Browse and navigate to the System subfolder under the folder where Windows is installed (typically C:\Windows). Now click on the 'Files of type' drop down list box and select All Files. Double-click on your screen saver, click on Next to assign a name for the shortcut, type something simple like ScrSvr and click on Finish. A shortcut will be placed on the Desktop. You can now invoke the screen saver by double-clicking on the ScrSvr icon.



Assign a Shortcut key to your screen saver



Create a shortcut to your screen saver

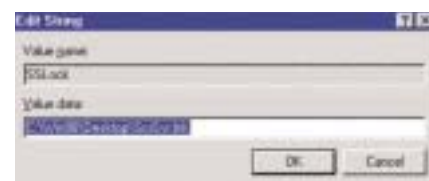
To make it even easier to invoke the screen saver, assign it a hotkey. Right-click on the ScrSvr icon on the Desktop and select Properties. Now click on the 'Shortcut key' field under the Shortcut tab. Any shortcut key combination will include the [Ctrl] and [Alt] keys by default; choose any key, say [S], as your shortcut key. Finally, click OK. You can now launch the screen saver by simply pressing [Ctrl] + [Alt] + [S].



### Screen saver as your Windows lock

In Windows 98, the default guest login offers full access to all system resources. Thus, it only takes a simple reboot to override the security measures provided by the screen saver password. A registry hack can remedy this and in turn provide some semblance of a login control system (actually it will only prevent unauthorised access, but in a single user environment, that's just as effective).

Click on **Start > Run** and type *regedit*. Remember to back up the Registry



Auto start the screen saver with Windows startup

files (the system.dat and user.dat files in your Windows folder) to avoid accidents. Now navigate to HKEY\_LOCAL\_MACHINE\Software\Microsoft\Windows\CurrentVersion\Run.

Click on the Edit menu and select New then String Value'. Give this string value any name such as 'SSLock'. Right-click the newly created String Value and choose Modify. This will open up the Edit String dialog box. Enter the path to the Screen Saver shortcut file that you created earlier in the 'Value data' field. Finally close the Registry Editor.

Now Windows will automatically load the screen saver whenever it starts up. And as we've enabled the Screen Saver Password feature, you will always be prompted for a password upon boot-up. This ensures that only someone who knows your Screen Saver password will be able to use the machine.

Your screen saver is now configured to provide on-demand security at the press of a shortcut key and will also prevent unauthorised use of the machine upon boot-up. Simple, yet highly effective. ■





Blank screen while loading games, missing data, floppies that don't work, problems with quadraphonic speakers—the doctor will see you now...

#### The right to write

**Q** I own a PC with a P4 processor, 128 MB RAM and a 40 GB hard disk. For quite some time I've been unable to delete some of my files from my hard disk and I get the message, 'cannot delete file. Check whether the disk is write protected or not in use.' This is extremely frustrating. Please help.

**Anand Kumar**

Via e-mail

**A** You haven't mentioned which OS you use or the kind of file system adopted by you; we are assuming you use Windows 2000 or Windows XP with NTFS partition.

First, you will need to check the per-

mission of the files you want to delete. Right-click on the file and select Properties. On the window that appears, select the Security tab. You will now be able to see the names of the users and the permissions granted to each. Check if there is an entry such as 'Everyone'. If yes, click on it and select Full Control.

If you can't find Everyone, check if there exists an entry by your username (login name) and click on the entry to view the permissions. If this is also not present, then enter your username or 'Everyone' by clicking on the Add button and then click Everyone or your login/username. Finally, add the required set of users and then click OK. Now activate the 'Full control' rights box for Everyone. Press the OK button to close the window. You will now be able to delete the file since you have the rights to access the file.

However, if you are using FAT32 file system, check whether the files are being used by any other program running in the memory. If not, ensure that you have no file protection software or any such utility installed on your computer. If you have software installed on your machine that gives you the facility to password-protect certain files, then check the permissions of the file using the software. Remove all protection, then delete the files.

#### XP autodials to the Net

**Q** My system has a P4 2.4 GHz processor, an Intel 845 GBV motherboard, 256 MB DDR RAM and a 40 GB hard disk.

I have Windows XP as the operating system. My problem is that whenever I start Windows XP, the dialup connection starts automatically. The same thing happens when I start a program. What could be the problem?

**Kumash Desai**

Via e-mail

**A** To solve your problem, go to Control Panel and double-click on Internet Options. In the pop-up window, click the Connections tab and select 'Never Dial a Connection'. Click OK to save and close the window. This will solve your problem, but now whenever you wish to get on the Internet you would have to manually dial a connection.



Right Access to users in Windows 2000



Stop your Internet connection from auto dialling

## I draw a blank!

**Q** I have a Pentium III processor with a Compaq Presario 5000 installed with Windows Me. The problem I am facing is that some games, after being loaded to play, show a blank screen, but the sound works fine without any disturbances. The busy light on my CPU remains on throughout. In a few other games, the graphics appear on screen gradually. Please help.

**Aditya Bajaj**

*Via e-mail*

**A** The problem pertains to the display drivers (VGA drivers). In the Control Panel, double-click on System and then on the Device Manager button. Click on the plus (+) sign next to the display adapters—it should not be showing a yellow icon on it. If it does show an error icon on the display adapter, then you need to load the updated set of VGA drivers.

However, if the adapter is configured properly then the problem could be because you are using a low-end VGA card. In this case, the only option would be to upgrade the VGA card to the level required by the game. A GeForce MX or above should be more than adequate for most games.

## Invisible Data

**Q** A few days ago I had taken my home hard disk (a 40 GB, 7,200-rpm drive) to my college to copy some data. I had connected my home hard disk as Slave (CL) and copied around 2 GB of data to it, but when I checked the hard disk at home (connected as Primary), it didn't show the copied files, though the used up space reflected the size of those files. What should I do? Should I format my C drive and reinstall the OS? Or is there another way out?

There's another problem with my C drive: when I run Disk Cleanup, it doesn't clean the disk properly. It stops in between, at 'Compress old files'. CPU usage reaches the 100 per cent mark and it doesn't come down even when I cancel it—it remains in the 'Tasks Running', so I have to manually end cleanmgr.exe to make things stable. Any ideas about these strange problems?

**Deep Ganatra**

*Via e-mail*

**A** Problems while copying from hard disk to hard disk usually happen while performing Drag-N-Drop copy. It is very easy to drag the files to the wrong folder. So if you remember some of the filenames that you had copied, search for them in

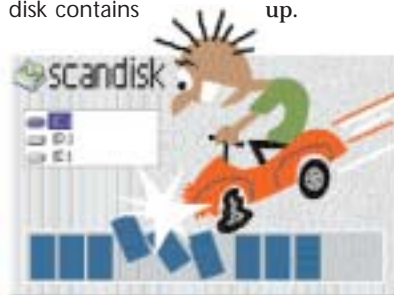
## Scandisk scans tirelessly

**Q** My PC has a P4 1.5 GHz processor, a 20 GB Samsung hard disk and an Intel 845 motherboard. My problem is that when I start the machine, it automatically runs Scandisk and also shows a message that the hard disk contains bad sectors. This is despite the fact that I shutdown the machine properly. But after completing the surface test, no bad sectors are found. Why is this happening? Please help me solve this problem.

**Shubha Nambiar**

*Via e-mail*

**A** Anytime a problem occurs while accessing the hard drive, Windows makes some entries in the registry. The next time you boot up the machine, Windows recognises the entries and takes preventative/corrective steps to



ILLUSTRATIONS: Mahesh Benkar

ensure less damage. Scandisk tries to detect the problem and update the registry entry properly. In your case, Scandisk, even after successful completion, is unable to remove the entry, hence Scandisk appears every time you boot up.

You could try disabling Scandisk manually in the msdos.sys file, but this would permanently disable Scandisk. It will not run automatically even in case of an error. So the safest bet is to reinstall the operating system.

Alternately, since you have a Samsung hard drive, you can download a diagnostic utility, SHDiag.exe, provided by Samsung on its Web site. In case this utility detects an error it can't repair, you should take your hard disk to the RMA centre for repairs.

your hard disk. Also ensure that the 'Show hidden files and folders' option is checked (Click on *Tools > Folder Options* or *View > Folder Options* depending upon the operating system installed).

As for your second problem, as time passes a lot of temporary files are created in the system, so it takes time to prepare a list of the unwanted files. If you feel that the machine hangs, run Scandisk with the Thorough option checked. The Thorough option checks the hard disk surface for physical damage. It would take some time to check but after the test is complete, the problem should be solved.

## Cannot playback audio stream

**Q** I have a Celeron 633 with 64 MB RAM and a 20 GB hard disk with four partitions. The primary partition (C:) has Windows XP Professional and Windows 98SE installed (in different folders); the last partition (F:) has Mandrake Linux installed.

In XP and Linux, video and audio files run well, but Windows 98 shows an error, 'Cannot playback the audio stream, no audio hardware is available or the hardware is not responding (Error =80040256)'; a little later the video starts without audio. How can I fix this?

**Anoop Kumar Vaidya**

*Via e-mail*

**A** You are facing this problem in Windows 98SE because its Windows Media Player (version 6.4) cannot play videos encoded with the newer codecs. To solve this, you need to install the appropriate codecs. The DivX codec is available at [www.divx.com](http://www.divx.com) and the Nimo codec at <http://nimo.titanes.com/modules/mydownloads/>. You can even download the latest version of Windows Media Player from the Microsoft Web site.

## Ruling the messages

**Q** My company receives around 200-300 messages a day, which are distributed to the employees concerned through Postmaster. In case a virus in a message damages a system, we have to run Windows setup again on that PC. This obviously erases all the Message Rules set in Outlook Express.

Is there some way to back up Message Rules in Outlook Express so that they don't have to be recreated in case of a Windows reinstallation? Also, can one rule be applied to all the terminals on the network?

**Sarita Sawant**

*Via e-mail*

**A** Outlook Express does not provide any mechanism to export/import Message Rules. So there's no option but to



re-enter each rule once you reinstall your operating system. There is also no way to implement these rules over the network.

What you could possibly do is switch to Microsoft Outlook which does allow you to export as well as import rules.

You can do this through the *Tools > Rules Wizard Options* in Microsoft Outlook. To export the rules, press 'Export Rules', type the filename and press Save. To import the rules, press 'Import Rules', select the filename and press Open to browse previously saved rules.

### System hangs the first time

**Q** I am facing a rather strange problem. If I boot my system after a fairly long interval, say 4 hours or so, it always hangs the first time. I have a Pentium III 800 MHz system with 128 MB RAM and 500 VA UPS. I leave the UPS charging all the time.

**R.B. Rajesh**

*Via e-mail*

**A** The problem seems to be with the SMPS of the system. If you have access to a spare SMPS, try changing to it. If this fixes your problem, then you should get the original SMPS checked by a professional.

### A halting response

**Q** Whenever I run any applications or games, they stop responding for a few seconds. Even after ending tasks of other applications (except Explorer, System Tray), the problem persists. Is this due to a virus? I have an Intel 810E motherboard, a Pentium III processor at 1.0B GHz, a 40 GB hard disk and 128 MB RAM with Windows Me and XP installed. Please tell me what to do.

**Rohit Yadav**

*Via e-mail*

**A** It all depends on the games you are trying to play. Every game has its own minimum hardware requirement, so do check in the manuals and/or documents of the game. You can analyse the RAM requirement from the Task Manager window in the status bar. It shows the Memory Usage as current/maximum. Remember that the maximum includes the virtual memory, so check your current usage value relative to the 128 MB RAM that your machine has. If it falls short, you need to upgrade to more RAM. Another factor to check is the VGA support required for the game. If the game

### No scrolling

**Q** I have a P-III 500 MHz system, Intel 810 motherboard, 128 MB RAM, a 10.2 GB hard disk, with Windows 98SE installed. I use Internet Explorer 6. The problem is that often when I want to scroll through Web pages or even scroll in Word or Excel files, my computer freezes and I have no other way than to do a warm reboot. I even formatted the hard disk, but it doesn't work. Please help.

**Kaushik Dutta**

*Via e-mail*

**A** You need to check whether the problem occurs when you scroll using your mouse or keyboard. Generally, the problem will be with your mouse, so just check the drivers for the mouse. For a Logitech compatible mouse, use Logitech drivers only. If the problem persists, try changing the mouse. If this doesn't work either, there could be a problem with the PS/2 port on your motherboard. As an alternative, if you have a free USB port, you could try using a USB mouse or even a serial port capable mouse.



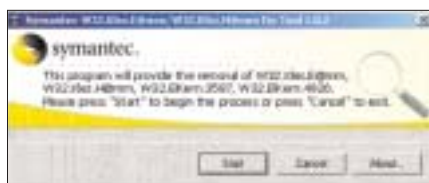
needs 3D and OpenGL, whereas the VGA card in your system does not support these, then you need to upgrade the VGA card too.

### Afflicted by virus

**Q** I have a Pentium III based system running Windows 98SE. It is connected with 10 other systems on the LAN. The problem is that the system is affected by viruses—alevir.exe, scrsvr.exe, marco.scr, brasil.pif, brasil.exe. I am using Norton 2002 and AVG AntiVirus, and I update these regularly. Even though I've deleted the virus-affected folders from the Windows directory, they reappear after some time. Please give me a solution.

**Sibasis Das**

*Via e-mail*



*FixKlez from Symantec cleans the registry entries made by the virus*

**A** Your system is infected with the Klez virus. Norton or for that matter any other anti-virus software can only clean/remove infected files from the system. They do not clean the registry entries and Klez is a virus that makes some entries in the registry, which makes it possible to re-infect the system. To eliminate the Klez virus, download

FixKlez from <http://securityresponse.symantec.com/avcenter/tools.list.html> to clean the registry entries.

### Of keyboards and handycams

**Q** I have installed both Windows 98 and Windows XP in my computer. In MS Word (Office XP), the numeric keys and other special symbol keys were not working properly—they seem to have become jumbled up. For example, when I press [#], I get the symbol £. Everything is working properly in Windows 98 and DOS. Please suggest a solution.

My second problem relates to the fact that I have a handy cam that is non-compatible with PC. Is there some way to connect it to my PC so I can view recordings on my computer, and store and burn the recordings onto CDs?

**Hemant Dwivedi**

*Via e-mail*

**A** Regarding the problem with your keyboard, go to Control Panel and select Keyboard. Here, set your default keyboard to US instead of UK or any other.

As for how you can connect your handy cam to your PC, buying a TV Tuner card would solve your problem, but first check whether your handy cam has a Video Out jack. You can then connect the Video Out of your handy cam to the Video In of your TV Tuner card. Finally, using the software that came with the TV Tuner card, you can record the movie on the computer while simultaneously playing the movie on the handy cam.

## FAQs

### Floppies don't work

**Q** I have a P-III processor and 128 MB RAM. Of late, I've been facing a problem with my floppy drive—whenever I put in a floppy, it returns a message saying the floppy is not formatted, and then the computer stops responding. I have tried formatting the hard disk. When I scanned the floppy drive with an anti-virus software, it said that the boot record has changed. I checked the BIOS settings, but couldn't figure it out. Please help me.

**Rocky Smith**

Via e-mail

**A** Try using a brand new IBM formatted floppy diskette in the drive. If the floppy functions properly, then your previous floppies are either damaged or are infected by virus. However, if the new floppy gives the same error message, then your floppy drive needs professional servicing.

As for the 'boot record has changed' message, it appears if you have enabled the 'virus warning' options in the BIOS. To get rid of it, you will have to disable this option in the BIOS.

### Missing boot.ini

**Q** By mistake I deleted a file named boot.ini from my hard disk. I tried to recover the file with the help of a recovery software, but it was too late. Now when I boot my PC, I get an error saying 'invalid boot.ini file. Booting from c:\winnt\' and then the PC boots normally. Is this a serious problem? So far I haven't faced any problem. I also tried to search for the missing file in the Windows 2000 Professional CD but in vain. Please help me with my problem.

**Hitesh Boricha**

Via e-mail

**A** To solve your problem, create a text file in Notepad (or any text editor). Type the following five lines

[boot loader]

Timeout=1

Default=multi(0)disk(0)rdisk(0)partition(1)\WINNT

[operating systems]

multi(0)disk(0)rdisk(0)partition(1)\WINNT  
T="Microsoft Windows 2000 Professional"  
/fastdetect

Save the file by the name, 'boot.ini' in the C: drive. Now you won't face this error anymore.

### Problem multibooting

**Q** I have an assembled computer with a P-III 700 MHz processor and 20 GB hard disk. I had seven partitions—C, D, E, F, G, H and I, plus J as the CD-ROM drive and K as the CD-RW drive. C drive runs Windows 98 and D runs Windows 2000 Professional. I also had Visual Studio.NET and SQL Server 2000 installed in G under Windows 2000 and everything was working fine. The problem began when I installed Red Hat Linux 7.3.

Now, booting into Windows 2000 takes about 5 minutes. After booting, whatever I do, whether it is opening My Documents or an application, the machine hangs. It is working fine in the case of Windows 98 and Linux.

I had deleted the H and I partitions to install Linux (creating Linux native and swap partitions), but these drives are still displayed when I open My Computer in Windows 2000—they are not displayed in Windows 98 though.

**Bhaskar**

Via e-mail

**A** The reason your system performance has slowed in Windows 2000 is because Explorer is trying to access the deleted H and I drives in the background.

Check whether the drive types of H and I are Swap and Ext or FAT or FAT32. If these partitions use the Swap and Ext file system, then you need to format them through Windows 2000 and reinstall Linux. This time, be careful about the type of partition you create through Linux (it should be FAT or FAT32) and don't forget to delete the partitions before Linux makes new ones for itself.

Here are the steps you need to follow to install Linux the right way: Select 'Manually partition with Disk Druid', then click Next. Select '/dev/hda6', click Delete and confirm by pressing Yes again. Select '/dev/hda7', click Delete and confirm by pressing Yes. Click New and type '/' for Mount Point. Select ext3 for File System Type and enter the size of the partition. Select the 'Forced to be a primary partition' checkbox.

Select the 'Check for bad sectors' checkbox, click OK. Under New, select Swap as File System Type and enter the size of the partition. Click OK and then continue with the rest of the installation process.

### Rear speakers do not work

**Q** I have a P4-based system with 256 MB RAM and an ASUS SL133 motherboard. I also have an ADCOM four-channel support soundcard. My speakers are Creative Cambridge 4.1. The speakers work fine with Windows 98. The problem is with Windows XP—when I use Winamp and Jukebox 7.0, the two rear speakers do not function and produce only a light buzzing sound. With other software such as Samsung's media player or Windows Media Player, there is no problem. I have tried changing the advanced settings in the control panel to quadraphonic speakers and have even reinstalled Windows XP, but to no avail. Please give me a solution.

**S. Ragunath**

Via e-mail



Set the keyboard to US

**A** Since you are facing problems using Winamp in Windows XP, you should install the A3D plugin. Installing the plugin would enable all the speakers and you can hear from all of them. The plug-in is available at [http:// classic.winamp.com/plugins/browse.jhtml](http://classic.winamp.com/plugins/browse.jhtml). Similarly you could try this for Jukebox 7.0 also.



Send your computing problems to  
[sos@jasubhai.com](mailto:sos@jasubhai.com) or  
write to Digit,

D-222/2, Om Sagar, MIDC, Nerul-400  
706, and we may answer it here!



# tips & tricks

## Freeware for all Occassions\*

Tips on some powerful freeware tools that you can use everywhere—at home, in the office and while online. Fortified with these tools and the secrets to getting the most from them, you can thrive entirely on freely available software!

*\*Also see 'All the Software you'll ever need' on page 64*



ILLUSTRATIONS: Mahesh Benkar



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### contents

- 18 Developer Tools
- 18 Home Tools
- 19 Office Tools
- 21 Internet Tools
- 22 Multimedia Tools
- 23 System Tools
- 24 Essential Tools



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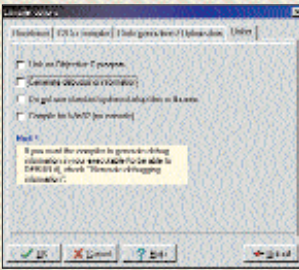


DEVELOPER TOOLS



Bloodshed Dev-C++ 4  
Smaller EXE files

You can ensure smaller file sizes for your EXE files compiled from the C/C++ code. Go to *Options > Compiler Options*. Under the *Linker* page, make sure the 'Generate debug information' box is left unchecked. Also, under *Code Generation/Optimization*, select *Best Optimization*.



Optimise your EXE files



Create custom setup files with this tool

Setting Classpaths in JCreator v2.50

JCreator is a fast IDE for Java, offering you all the functionality within commercial IDEs. With JCreator you don't need to head off for the command prompt while working with Java—with a powerful GUI-based interface, everything is a mouse-click away. When working with multiple libraries scattered across different

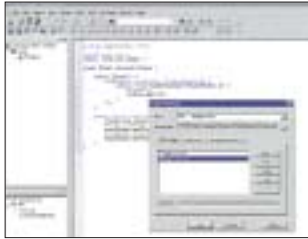


Set the profiles and classpaths

*Options* and selecting *JDK Profiles* from the list at the left side. Clicking on *New* lets you select the directory where the *JDK* is located. Then, you can add additional paths and libraries by clicking on *Add > Add Path...* or *Add > Add Archive...* This lets you define custom paths and libraries, unique to that profile.

If you work across several versions of the *JDK* or would like to create unique profiles of the *JDK* for different uses, click on the *New* button to add in another profile. Remember that the first profile listed will be the default.

You can choose a specific profile or add a library class-path for a project without opening the *Options* menu. Click on *Project > Project Settings* and select a *JDK* profile. You can also set up the required *Libraries* and *JDK Tool* options specific to that project.



Set project-specific profiles and classpaths

Setup Creator

To create a setup package which will let others install your executables, click *Tools > Setup Creator* or press [F11] to open the *Setup Creator* menu. Fill in the details such as the software title and organisation name; set other options such as the background colour scheme. You can set the license details and add the files you intend to distribute along with their final location. Finally, click on *Build* to create the setup EXE file.

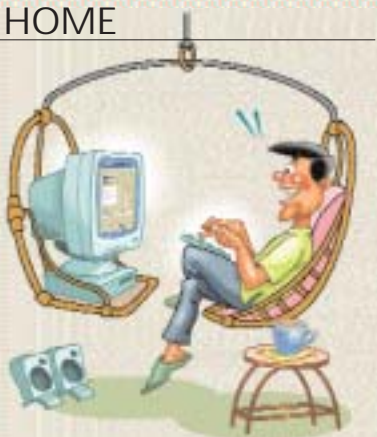
Package Manager

When you install additional Dev-C++ packages such as extra libraries, you can manage them using the *Package Manager* utility. The *Package Manager* gives you detailed information at a glance about the contents of the package, including file listings, descriptions and version details. It also lets you remove any packages. To access the *Package Manager* within the main window, go to *Tools > Package Manager*, or press [Ctrl] + [F12].

HOME

ClickTray Calendar  
Setting alarms

To set alarms, select *Alarms* from the list on the right in the main window. Under the *Data Input* tab, enter the time of the alarm and choose between displaying an alarm message or starting or closing a program. If you choose to display a message, you can enter the message in the message field. If you choose to start or end a program you will need to enter the program's location



or name in the field. Flip through the other tabs to set even more detailed preferences.

Finally, from the list at the

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Where Technology takes you

Tips & Tricks, Software shortcuts, Q&A know-how,  
How to guides, Step-by-step tutorials, Beginner guides

Help

[www.zdnetindia.com/help](http://www.zdnetindia.com/help)



### Create your own Multimedia Card with FreeCard 2.0



Create colourful multimedia files instantly

FreeCard 2.0 will give you a great multimedia card in a jiffy. To create the card, first start the FreeCard application. You can add pictures by clicking on the Select Graphic or Video button (the first button to the left). You can add Bitmaps (BMP) or videos (AVI format). If you choose a

Bitmap, then you can set the way the presentation opens, by selecting it from the drop down list. To add music, click on the Select Music button. You can use MIDI or WAVE files. You can write a personalised message on the text field to the right. Finally, preview the card by clicking on Run. You can now see the card that you have created. To send the card, click Send. You can choose to have it sent by e-mail or through Windows Messaging or make a standalone EXE file.



Set your daily alarms here

bottom of the Data Input tab, select Insert Alarm (this is the first button from the right). You should see the alarm listed in the alarm text list on top. You can then minimise ClickTray Calendar back to the system tray, and continue working.

#### To Do lists

ClickTray Calendar will help you maintain a comprehensive To Do list, which you could sort separately by category. In the main window, choose To Do List and set the categories and tasks. First,

create a new category by clicking on the Add New Category button on the bottom left. You can choose an existing category by highlighting and checking it. To add a task to the category, enter the text into the Text Enter Area window and click on Add Entry. Finally, click on the OK button.

If you have finished your To Do tasks, just click on Done!

#### Countdown Clock

If you are driven by time and would like to have a countdown clock ticking away on your desktop, select Countdown Clock from the list at the right side in ClickTray Calendar. In the window that comes up, you can set the countdown time under the Settings tab. Once the time is set, click on the display tab and click on Start Clock. Your time starts now!

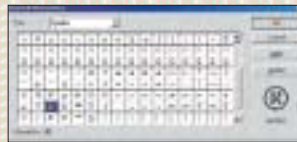
### OpenOffice.org

#### Turning off AutoFormat and AutoCorrect in Writer

Writer, the word processor within the OpenOffice.org suite, comes with automatisms, namely the auto format and auto correct facilities. While these may be useful, they can also be irritating especially when text is being corrected or formatted wrongly. For example, with the default settings it will capitalise the first letter of every sentence, or every URL is recognised and is coloured to mark it out as a hyperlink. To turn off such auto format and auto correct options, go to **Tools > AutoCorrect/AutoFormat**. Under the Options tab, uncheck the specific options that you don't want. You can choose not to have it auto correct and auto format while you modify the text or while you enter the text on to the page. To turn back the auto correct and auto format options, select the options that you want enabled.

#### Inserting special characters in Writer

To insert special characters such as the ® or © or ™ symbols within the document, bring the cursor to the place where you want the character or symbol inserted, and then



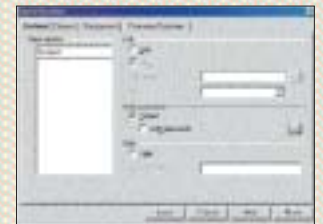
Adding special characters



go to **Insert > Special Character**. Choose Symbol from the Font list and click on the symbol you want inserted.

#### Locking text in Writer

Writer also has the option where you can lock in a section of the text to prevent it from being edited or changed. Select the portion of text that



Lock up your text from here

you want protected, go to **Insert > Section** and under the entry for Write protection, select the Protect option. Finally, select Insert. The selected text is now locked; you cannot overwrite the text.

If you would like to safeguard the section with a password, choose the With Password option, provide a password and click OK.

#### Freezing the panes in Calc

If you would like to see row or column captions for a long



spreadsheet as you work through it, you can freeze the fields that hold the caption. If it is a single row or column caption that has to be frozen, click on the cell just below or to the right of the row or column that will contain the caption. Select **Windows > Freeze**. If you have either column captions or row captions, you can create a cross freezing by clicking on the uppermost left side cell that does not contain a caption. For example, in a sheet with single row and column captions, you should choose the B2 cell.

If you have multiple row and column captions to be frozen, you can split the sheet window. Click on the cell just below or to the right of the row or column where you want to insert your caption, and select **Windows > Split**. The sheet window will be split. Now you can scroll both parts of the split window, displaying the caption as per your requirements.

### Cell protection in Calc

All the cells in Calc are protected by default. However, you can turn off this feature. To do so, select all the cells in the spreadsheet. Go to **Format > Cells** and select the Cell Protection tab. To turn off protection for all the cells, uncheck the Protected option. Click on OK to finish.

If you would like to enable the option, just select the Protected option.

To selectively enable the protected option, select the cells you want protected, go to **Format > Cells** and select the



Protecting the data within your cells

Protected option under the Cell Protection tab. You will need to turn on the protection at the sheet level. Select **Tools > Protect Document > Document**. You can provide a password here to ensure that those fields cannot be edited.

### ###...?

You may see ### in a cell where you have entered some data value in Calc. This happens if the value is too large to be displayed—Calc will clip it and display '###'. To read the value, you can resize that particular cell. If the cell content is text, you can double-click on the cell. This will



Unhashing the hashes

show a red triangle that indicates that the field is overflowing.

### Saving as text files

You can output the Calc spreadsheet into an ASCII delimited text file. Go to **File > Save As** and select Text CSV as the File type. Enable the Edit filter settings box. Set the delimiters that you need.

Finally, click on Save and the text file is generated.

### Saving Draw documents as standard formats in Draw

Draw is the OpenOffice.org application that lets you work with the images in your documents. It saves the images in the SXD format, which is a document format. To save the Draw document as a standard graphics format, go to **File > Export** and from the dialog box that appears, choose the graphics format you want the files saved as; click Save.

### Cropping images in OpenOffice.org Draw

Once the image is inserted into your drawing file, click on the image to open the image toolbar. Within the



Cropping the image in Draw

image toolbar, select Crop (the right-most button). This will open up the Crop menu. You can add the exact measurements of the canvas that you want cropped. Finally, click on OK.

### Microsoft NetMeeting 3.01

#### Sharing it all

Microsoft NetMeeting also lets you share entire programs, which you can access as though you were at the remote computer. Go to **Tools > Sharing** and select the programs you want shared. You



Share your programs from here

can enable total sharing by selecting Allow Control under Control. This will allow people to access the remote application and make changes to it.

### Transferring files

To send a file to another computer on NetMeeting, go to **Tools > File Transfer**. This will open the file transfer menu. Go to **File > Add Files** and add the file that you want sent. Then click on the **File > Send A File** to send the file to the other computer or highlight and right-click the file and select Send A File. To send multiple files at the same time, first add all of them to the menu, then go to File and select Send All. This will send all the files to the other computer.

### Whiteboarding

To create an area for all the parties to interact, you can set up a common whiteboard through **Tools > Whiteboard** in NetMeeting 3.01. This will open the Whiteboard, which can be viewed and used by all the parties in the meeting.



## INTERNET



### AI RoboForm

#### Adding your vital stats

With AI RoboForm you can save a lot of your confidential personal data. Click on AI RoboForm in the system tray and go to Edit Identities. Here you can flip through the tabs to enter details for the current identity, such as name, address, password, e-mail address, credit card information, bank account information and so on. Since all this data is encrypted and stored locally on the disk, it is safe. Use it for accessing pages that require registrations and passwords, shopping sites and even for logging into your Hotmail account!

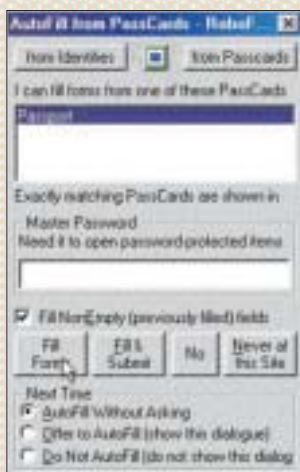
#### Protect Your Identity

Since you may tend to entrust quite a lot of confidential and personal data to AI RoboForm, it makes sense to protect your identities and passcards. To do so, choose Options from AI RoboForm

on the system tray and then flip over to the User Data on the Options menu. Select Set Master Password and enter a master password. This will be used to protect your identities and passcards.

#### Auto filling forms

To auto fill a form, click on AI RoboForm in the system tray; go to More on the toolbar and choose Options. Under the Form Filling tab, select Auto Fill Without Asking. It will fill



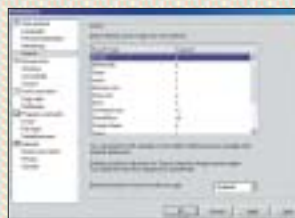
AI RoboForm's AutoFill stands by

forms from a passcard if a passcard matches the current Web page. If no passcards match the current page, it will fill forms from the Current Identity.

### Opera 7

#### Google within Opera

If you are a heavy search engine user, you will find this very handy. To run a Google search on say, SETI, just type



Set search keywords here

'g SETI' in the address bar and you will immediately link up to the search result page at Google.com. To access other search engine options, go to *File > Preferences* and select Search from the list. You can choose from Google, AllTheWeb, Lycos, Download.com and other search engines. For each there is a keyword to be entered before adding the search term.

#### Customise and disguise

If you would like to stop opening (or start opening) pop-up windows or access other options on the fly, you can do so by pressing [F12] while in Opera and set options such as accepting or refusing pop-up windows or enabling/disabling Java and cookies as well as identifying your browser as IE or Mozilla. You could access all these options from the Quick Preferences option from the File menu.

#### Mouse Gestures

One really useful feature within Opera is the Mouse Gestures feature—it allows you to do common tasks within the browser without clicking buttons on the toolbar. For example, to access the previous page in the history, you need to keep the right button pressed as you move the mouse to the

left. To close a page, just hold down the right mouse button and move down, and then to the right, tracing an 'L'. There are mouse gestures for nearly all commonly done tasks within Opera—you wouldn't really need to press the buttons on the toolbar!

#### Zoom and full screen views

To zoom in and out of a Web page, don't look around for an option within the toolbar—just press [=] to zoom into a Web page and [-] to zoom out of a Web page.

Full screen views in Opera are accessed by pressing [F11], but here is where the difference lies: within Opera you get a totally 'full' screen view. Unlike IE, there are no toolbars on top.

#### Remembering where you went last

If you abruptly stopped your last browsing session, Opera remembers where you went last. When you restart Opera, you will be prompted to start



Crashed? Resume effortlessly

from where you stopped and resume what you did last.

### Netscape 7

#### Tabbed Browsing

With tabbed browsing being



Notebooks, Hand Helds, Cameras, SMS  
MP3 Players, Mobiles

Digital World

www.zdnetindia.com/digital



one of Netscape's better features, this is how you can enable it in case it hasn't been enabled. Click on *Edit > Preferences* to access the Preferences window. Expand the Navigator tree and select Tabbed Browsing. Select the options you want. You can open a new tab by pressing [Ctrl] + [T] and cycle through all the opened tabs by pressing [Ctrl] + [PgUp] or [Ctrl] + [PgDn].

### Searching from Netscape

The default search engine for searching from within Netscape is Google, but you can set another search engine. Go to *Edit > Preferences* and select Internet Search. You can specify the search engine that you want to work with from within the drop down list. Finally, click on OK to set the preference. If you enter a term on the Address bar that cannot be resolved into a Web page, Netscape will now automati-



Set in the search preferences

cally search for it in the default search engine.

### Enabling Quick Launch

If you have not configured Netscape to load at startup, then enabling the Quick Launch option will give you fast loading times. To enable Quick Launch, click on *Edit > Preferences* and select Advanced from the list at the left. In the Advanced menu, under 'Enable features that increase performance', select Enable Quick Launch and select OK. After a reboot, you should see Netscape loading faster.

## MULTIMEDIA



### VirtualDub

#### Compressing Video

If you have large MPEG files and would like to see them converted into smaller sizes, you can choose to re-encode them into the AVI (Audio Video Interleave) format. The best AVI codec is the DivX codec series. However, you would need to have the DivX codec installed in your computer. You can also use the Indeo codecs, which give good results.

Open the file in Virtual-

Dub and go to *Video > Compression*. The options listed will be the ones for which the codecs are present in your machine. Choose the DivX codec, which gives the ideal balance between file size and quality. Click on OK; this brings you back to the main screen. Click on *File > Save as AVI* and save the output file. The conversion then starts and you can monitor the progress of the encoding from the VirtualDub Status indicator.



Encoding with the Indeo codecs

If you are using the Indeo AVI codecs, then in the *Video > Compression* screen, you will need to specify the video compression quality—choosing a value between 80 to 90 per cent should give you good file sizes with little loss in quality. Lower settings will affect the quality, but will give you lower file sizes. You will also need to enter the value for a keyframe interval—this will ensure quick fast-forwards and rewinds within the video file. A lower value here is recommended. Select a value of 85, which will give you good results.

### Filters

VirtualDub comes with some very useful filters. You can use these to resize or realign your video files, crop or integrate



Using the filters in VirtualDub

special effects such as motion blur or smoothing into the video files. The filters are accessed from *Video > Filters*. For example, if you would like to have still smaller file sizes, you can resize the video. To resize the video, open the source file. Then click on *Video > Filters* and then click on Add. This will open a list of available filters. Choose 2:1 Reduction (High Quality) and click OK. You can add more filters to the list in the same way. Then choose your compression settings and save as an AVI file. You select the order in which you want the effects applied.

### dBpower AMP Music Converter

#### Right-click!

To start using dBpower AMP, all you need is to have the plugins for the format into which you need to encode your audio files. Once you have



them installed, you can start right away. Within Explorer, locate the file that you want encoded. Then right-click and choose **Convert To**. You should see the listed options for the audio formats supported. Select the format of your choice and click on it. This will bring forth the Options menu where you can set parameters such as encoding quality and type. When you have entered the options, click on **Convert** to start converting the file.

### Audacity Removing noise

To remove excess noise or hiss from the audio file, first select a few seconds of hiss (at the beginning or the end of the clip) and then click on **Effects > Noise Removal**. Click on **Get a Noise Profile**. This will generate a profile of the frequencies you need



*Cleaning up scratchy audio files*

removed from the file. Finally, select the audio section from which you want the unwanted sound artefacts removed, go to **Effects > Noise removal**, and select the amount of audio you want filtered. Experiment with how much sound you want removed—too little and the artefacts remain, too much and the audio portions may be lost. Finally, click on **Remove Noise**. That is it. Audacity will start cleaning the audio file.

## SYSTEM TOOLS

### ZoneAlarm Program control

Clicking on **Program Control** lets you set security levels for programs that may access the Internet from your computer. Clicking on the **Main** tab lets you set broad-based rules; set **Medium** here.

To set specific rules for each program, open the **Program** tab—here you will find listed all the programs that have tried to connect. You can also add any programs here that you would like to allow access to.

These could be your brows-



er, mail client, or any other specialised programs. For example, if you use file-sharing programs over the Internet, you can add the file name here through the **Add** option,

### PC Inspector File Recovery

This is an indispensable tool for those times when you delete a file, only to realise that you need it back! Relax, you are forgiven—you can use this excellent file recovery tool

First, start **PC Inspector File Recovery**. You can choose between recovering lost files, finding lost data, and finding a lost or inaccessible drive. Select **Recover Deleted File**. Then, within **Select Drive**, click on the **Logical Drive** tab and choose the drive on which your data was located, then click **OK**. Within the Explorer-like interface, choose **Deleted** and locate the folder where the file was located. The deleted file will be indicated in green and alongside you would be able to view the status of the deleted file. Right-click

on the file and choose to **Save To...** to save it. You would need to save it on another drive (physical or logical). Choose the location and click **OK**.

Depending on the disk and the deleted file, you should have a working file recovered.



*Recover those deleted files*

and set the parameters for it. You can choose between denying access, to allowing outright access or settle on the program asking for permis-

such as Yahoo! or MSN or mIRC. You can assign these rights from **Programs Control** under the **Programs** tab panel. **ZoneAlarm** continuously monitors the activity of the programs and hence prevents unauthorised access.

### Alerts

If you have chosen to view alerts while installing **Zone Alarm**, you will be alerted as soon as a program tries to connect to the Internet or network. The alert will specify which program is trying to connect, and you can choose to allow or disallow it. You can ensure that programs that you frequently use, such as your browser or mail client, can be allowed to establish such connections. There may be other programs that may try to



*Set Program Control from here*

sion every time it wants to connect.

### Server rights

**ZoneAlarm** may alert you about granting server rights to certain programs—this is the case with chat and file transfer software that allow for real time conversations,



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Alerts warn you about inbound and outbound connections

access the Internet—some may be legitimate, but there may also be some spyware programs. Use your discretion before allowing them to connect. Clicking on the More Info button at the AlertAdvisor connects to ZoneLabs online, and gives more information regarding the alert.

#### Full stop

If you would like to stop all Internet connections, except inbound and outbound, click on the red Stop button—this will stop all connections at once. The Internet lock can be configured from the Program Control screen, in the Main tab. This is obviously a drastic measure—you would need to use this in the event that you are certain that a Trojan or some major security loophole exists within your computer.

#### Temporarily stepping down security

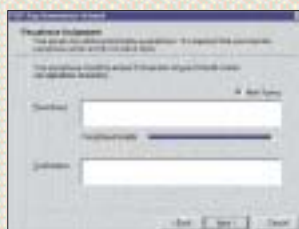
You can step down the security if your programs tend to conflict with ZoneAlarm. This may happen if you use software such as VNC or PCAnywhere that let you

control a remote computer. But be sure to restore it later!

#### PGP Freeware

##### Creating your key pair

Encryption with PGP requires that you generate a public and a private key. The public key is distributed to everyone so that they can encrypt and send you secure messages. The private key is kept confidential and is used to decrypt the messages. After installation, PGP will prompt you to create your key pair. To create additional keys, click on PGP on the system tray and choose PGPPKeys. To create a new key pair, go to



Creating the key pair

Keys and select New Keys. This will open the Key Generation Wizard. Choose Expert if you want to specify additional parameters such as the key size and key type. Clicking on Next will prompt you for a passphrase, and finally, you can generate the key pair.

##### Distributing the public key

You should distribute your public key so that people can send you securely encrypted messages. Simply right-click on the key and choose *Send To > Domain Server* to send your key. To send your key by e-mail, choose *Send To > Mail Recipient*.

## ESSENTIALS

#### Internet Explorer 6

##### Image toolbar

The Image toolbar pops up when you hover your mouse over certain Web page images. It lets you save/print/e-mail pictures and also opens up the My Pictures folder. If you find the toolbar to be a nuisance, you can disable it by right-clicking on the toolbar and selecting *Disable Image Toolbar*.



IE6's Image Toolbar

You can later restore the Image Toolbar through *Tools > Internet Options > Advanced*. Scroll down to the Multimedia section and select the *Enable Image Toolbar* option. The next time you launch IE, you will get the Image Toolbar.

##### Enabling/disabling auto resize

The Auto Resize function in IE 6 resizes large images to fit into the browser window so you no longer need to scroll horizontally or vertically to view the file. This is enabled with the default install, but you can enable/disable the function from *Tools > Internet Options > Advanced*. Within the list, scroll down to the Multimedia section and

select (or deselect) the *Enable Automatic Image Resizing* option.

##### Deleting cookies and personal information

You can get rid of tiresome cookies through *Tools > Internet Options*. Under the General tab, locate Temporary Internet Files and click on Delete Cookies.

If you use IE6's AutoComplete feature you may end up with IE hanging on to much



Clearing out personal data from the AutoComplete feature

of your confidential information. To erase this information, go to *Tools > Internet Options* and click on the Content tab. Click on *Clear Forms* and *Clear Passwords*.



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Server Zone

www.zdnetindia.com/server



// No man is an island //

JOHN DONNE

# What fun in playing solo

A quick guide to the world of multiplayer mayhem

Kawabonka launcher  
GameSpy 3D  
Find it on Mindware



Let's face it. As game technology currently stands, artificial intelligence (AI) is an oxymoron. Small wonder then, that avid gamers are forced to seek greater challenges in the online world. Once you've mastered the single-player experience, the only option left is to test your mettle against human opponents.

However, there is a catch—playing resource-hungry games online requires a fast connection (read broadband). Let's glance at the most critical factors that affect any network connection—ping, latency, and bandwidth. Ping (often confused with latency) is the amount of time it takes for a packet of data to travel to the server and back to your computer. Lower the ping time, faster the connection. Latency is defined as the response time, that is, the time it takes between you giving a command (pressing the trigger) and its execution (firing the gun). It's possible to have high latencies even with very low pings (if the server is overloaded with intensive applications). Finally, higher the bandwidth, faster the connection. However, if you try and connect to a server overloaded with network traffic, you'll still get very low pings.

So where does that leave us poor souls in India? Broadband is still a distant gleam on the horizon. The only course of action is to hunt for local servers where the lag (the time between giving a command and seeing it executed) won't be crippling, or use the LAN provided by the cablewalla to host multiplayer sessions.

## Indian Communities

As far as the gaming scene in India is concerned, the only Internet server we have is at [www.kawabonka.com](http://www.kawabonka.com). This lone server satisfies the needs of our *desi* hardcore gamers. Kawabonka runs *Quake III Arena* and *Counter Strike* servers on a regular basis. Relatively obscure games such as *Unreal Tournament 2003* or *Battlefield 1942* are set up on demand. The main hurdle in hosting more games is their complete lack of availability and gamers' reluctance to buy legal copies of games. As Ricky Kapur, who manages the Kawabonka server, says, "The problem is mainly that enough users don't own legal copies of the games, usually required to play online. Therefore, setting up a server is quite pointless if only four to five people have a legal copy of a game! Add to this the fact that a lot of games don't arrive at all in India!" Bleak, indeed.

Since Kawabonka has a very limited online presence, it's up to the local cybercafes to encourage multiplayer gaming and hopefully make gamers move on to Internet gameplay. Two notable examples are Skirmish in Mumbai, and Surf's Up in Pune. These cybercafes hold tournaments on a regular basis and are breeding grounds for multiplayer talent in India.

The popularity of team-based games such as *Counter-Strike* has led to the formation of groups or 'clans', as they're called in gaming parlance. Clan members always stick together and take part as a team in all games that allow it. Although meeting in real-life is pretty hard to do because of the geographical



separation between players, online meetings occur on a regular basis.

If you were to attend one such clam meeting, you'd probably find that the population is exclusively male—barely 0.5 per cent of the registered members on Kawabonka.com are female, out of which only a couple might have actually played a game online. Ricky knows a grand total of one female who plays multiplayer regularly.

### Hard Facts

The hardware required for hosting a multiplayer game varies accord-

ing to the game that is played, the geographical distance between users, and the number of players expected to join. This last factor is the most important one to consider when you'll host a multiplayer session. As an example, a typical *Quake III Arena* game involves around eight players over a LAN. In such a case, the player with the fastest PC hosts the server and plays the game. There's no need for a dedicated server (a machine that only hosts a game and does not play it), as the connection type (LAN) and small number of players

are good enough for the server to handle frags with no lags!

There are various connection methods, and each of them can be used to play multiplayer games, provided that the specific game supports such connections:

**LAN:** This is probably the most widely used method of playing multiplayer games. Internet providers have begun to offer 24x7 connectivity to users through the means of a LAN controlled by a server. This has brought networks to residential areas—hotspots for gaming.

A LAN is located in a geographically small area, a few square kilometres at the most, but typically inside a building or group of buildings. This not only provides great access speeds (up to 100 Mbps) but also increases the social interaction. A great way to play multiplayer and have busloads of fun is to host a BYOCLP (Bring Your Own Computer LAN Party). The idea is simple: call everybody you know who has a PC—more the merrier. Get hold of a few network cards, an 8-port hub, and you have a LAN inside your own home.

**The Internet:** Next to LANs, this is the most popular multiplayer game type. You need to have an Internet connection to be able to join online servers, and a fast connection, at that. This rules out most of the gaming public in our country. The only way that people with

## Set up your own Quake III Arena server over a LAN

Click on the Multiplayer menu in *Quake III* and click on Create to go to the server setup screen. Choose a map to play in. Scroll down to a map of your choice and click on it. Next, choose the game type and click Next.

In the next screen, select the number and type of players that will join your game. Open indicates that the slot is reserved for a human player, while selecting Bot will make a computer-controlled opponent join the battle.

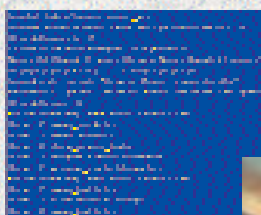
You can adjust the difficulty of the AI through the Bot Skill option.

The list on the right sets the server parameters. Frag Limit and Time Limit set the conditions for ending each round. A Frag Limit of 20 tells the server to end the game once a player achieves 20 kills, while a Time Limit of 20 will end the game after 20 minutes. Setting

any field to zero removes that limit.

The Dedicated flag controls whether the server can take part in the game. A dedicated server, once started, switches off the graphical display and merely hosts the game.

This method greatly increases the performance of servers running on slow machines, but you'll have one less PC to play with. Set



You can either set up a dedicated server (above) or otherwise enjoy a normal CTF game (right)



Pure Server to off to ensure compatibility with all machines, then choose a name for your server in the Hostname field. If you are playing in version 1.32, disable the anti-cheat program, Punkbuster. It's not required for LAN games. Click on Fight, and you're ready to rumble!



modems can hope to get workable speeds is to connect late at night to an Indian server (such as Kawabonka), or a high-speed server based in Singapore or Hong Kong.

To play Internet games, you need to be online before you fire up your game. Once inside the game of your choice, select the Multiplayer option, then choose TCP/IP and then Internet. Quite a few games also offer an Internet option straight from the Multiplayer menu, so you'll need to select that instead. It'll take a while to search for online servers and connect to them, so be patient.

**Dial-up Connection:** This method is almost dead now. It's limited to two players and is also the slowest method, and often ends in failure. The procedure involves setting up a dial-up server via the Game Type in the Multiplayer menu of the game. The game in the second machine then dials the server and establishes the connection. The speed is directly dependent on the geographical distance between the players; with increasing distance, the quality of the connection will fall.

### The Software Aspect

Once you have the hardware in place, there are quite a few tools available that make life a lot easier as far as setting up and joining game servers is concerned. One such program is GameHost. It specialises in supporting the most popular First Person Shooters, and makes setting up servers for these games a snap. It takes care of all the command-line parameters and complex console commands, presenting them in a graphical format that's easy to understand. The latest version adds support for *Return To Castle Wolfenstein*, in addition to the ones it already supports—*Quake*, *QuakeWorld*, *Quake II*, *Quake III Arena*, *Hexen II*, *Half-Life*, *Sin*, *Starsiege Tribes* and *Unreal Tournament*.

// If we ran it (kawabonka.com) to make money, we would have been forced to shut it down in the first three months itself //

RICKY KAPUR  
KAWABONKA.COM

The server component of GameHost requires at least Windows 2000, due to its improved network handling over previous versions of the OS. The program runs as a service, which means that it starts automatically with Windows, without requiring you to log on to the machine.

On the client side, the most popular software used for connecting to game servers on the Internet is GameSpy Arcade and GameSpy 3D, which between them, support dozens of the most popular games. The tools, offered by the GameSpy Network, take upon themselves the job of scouring the Internet for all servers that are currently hosting the game of your choice, presenting the results by number of players, server ping time (lesser the ping, faster the server), game type, and game map. You can also chat and exchange files with other users, add them to

your buddy list and invite them for game sessions, providing the full functionality of an instant messenger.

Users of the GameSpy software can even perform voice chats with each other, although this requires you to pay a small fee and subscribe to the service. The software can also act as a download manager.

Another tool that multiplayer gamers will find useful in the course of their online

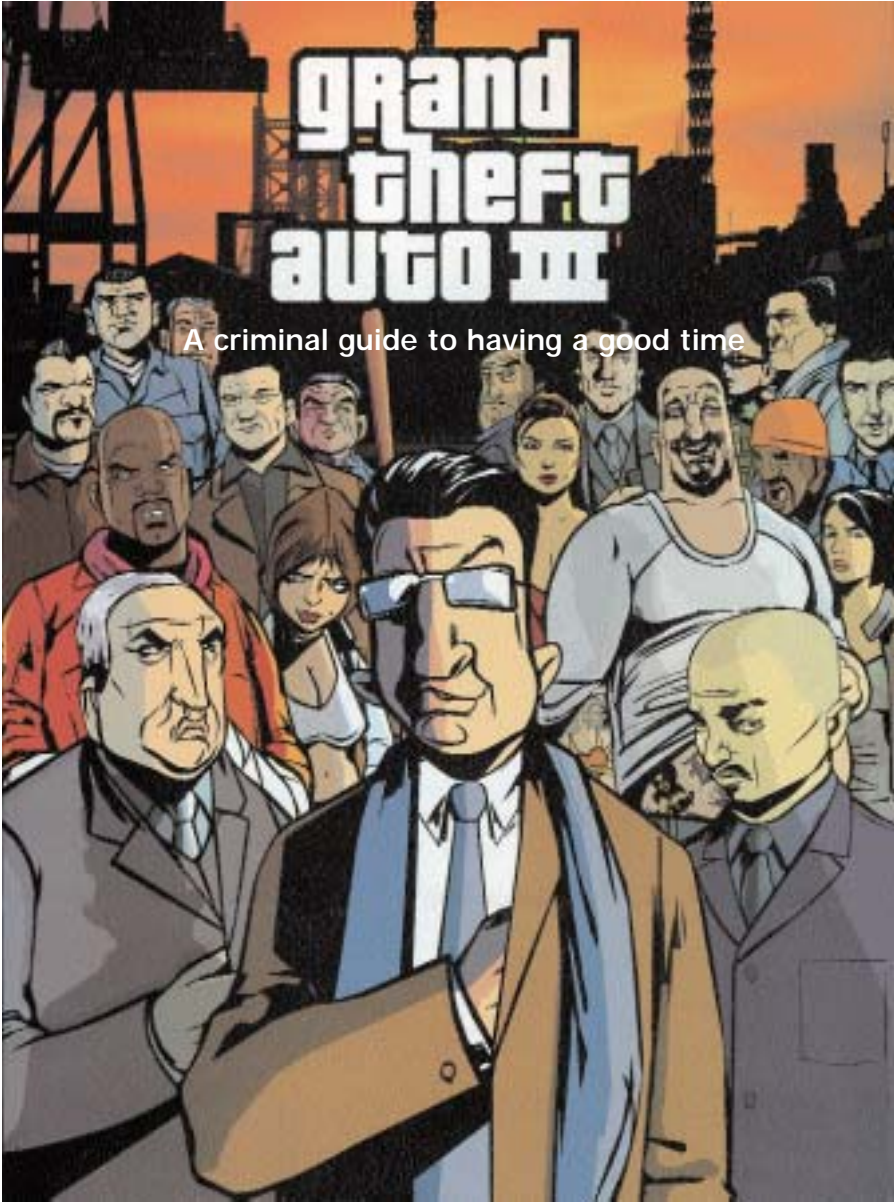
exploits is a Log Analyser. Applications such as Q3Log provide a stylish interface to analyse the logs created by the game server and create an HTML page with player rankings. It supports just *Quake III Arena* and *Return To Castle Wolfenstein*, but is very good at what it does.

### Futurama

Practically every game released nowadays features extensive multiplayer support. In developed countries, multiplayer gaming has begun to assume even more importance than the single-player experience. In India though, we still have a long way to go. Until we have broadband, it looks like the only platform avid gamers without high-speed access will have to display their talents would be at competitions hosted at college fests and cybercafes.

BADRI NARAYAN





A criminal guide to having a good time

Modus Cheats

(when operandi fails)

To enter these codes, pause the game by hitting [Esc] and then type them out

GUNSGUNSGUNS	Gets you weapons
IFIWEAREICHMAN	Gets you money
GESUNDHEIT	Gets you health
TURTOISE/TORTOISE	Gets you armour
ITSALLGOINGMAAAD	Pedestrians go crazy
NOBODYLIKESME	Pedestrians are out to kill you
WEAPONSFORALL	Pedestrians carry weapons
CHITTYCHITTYBB	Cars fly around
MOREPOLICEPLEASE	Your wanted level rises
NOPOLICEPLEASE	Your wanted level falls
GIVEUSATANK	A tank is spawned
ILIKEDRESSINGUP	You can change your avatar
BANGBANGBANG	Cars blow up around you

Flip a coin enough times, it is said, and it is likely to land on its edge. Whatever. *Grand Theft Auto III (GTAVIII)* is a great game and we want you to enjoy it to its fullest. Read on to find out how.

Most Wanted

You can customise the game to your music—in your *GTAVIII* game folder, look for a subfolder called MP3 and place your favourite tunes within. Start the game and scroll through the radio stations until you get to the last one. This one will play your personal MP3 numbers.

Flambé

To get a flame thrower at your hideout, complete at least 20 fire-fighting missions on an island.

A runaway secret

Go to the airport and go down the runway that the airplanes do not use. Walk or drive until you get to the cliff, then drop down the cliff to find yourself a speeder!



Easy money

Get yourself two tanks; either by means nefarious or by cheating. Then simply ram one tank with the other and watch your funds go through the roof.

Scream fire

Steal a fire truck to begin the Firefighter mode. When the game offers you a fire to put out, press [F1] to start a replay and press the key again to cancel the replay. The fire will be immediately extinguished, no skin off your back!

Mad Max

A Vigilante mission will start when you have acquired a law enforcement vehicle. To make your targets much easy to subdue, drive close to the vehicle in question, and press [Esc] to bring up the Options menu. Then choose Resume Game and your target will stop its vehicle and get out, making it much easier to kill.

Nursing a home

Complete 35 ambulance missions to get a heart at your hideout, 70 such missions will award you with an adrenaline pill at your pad, while reaching level 12 during an ambulance mission will get you the infinite run cheat.

Taxi driver

To unlock The Borgine Taxi, a new faster vehicle, complete at least 100 taxi missions.

Game with a view

Drive a 4x4 up to the highest land point in the game, the mountains in North Shore-side Vale, for a breathtaking view of the entire city. Sunset and sunrise escapades are especially rewarding.

Glide to be of service

Use the Dodo to get an aerial perspective on Liberty City. The Dodo is a small aircraft with stripped wings; it acts as a glider and is the only means of getting airborne within the game. It can be found at the airport hangar in Shoreside.





# Off the Shelf



## Hitman 2: Silent Assassin

Nice shot

There is nothing like a few days, close to God, to get an assassin back into business. *Hitman 2* sees Agent 47, our angel of death, give up cosy living as a gardener in a monastery and retake the streets and a life of crime. A born again.

The game is an immensely satisfying stealth-shooter that eliminates many a problem that plagued the first part. The sequel comes packed with a gorgeous engine, well-designed levels, better AI and controls (although you still cannot jump), and tools aplenty to get your dirty job done. The in-game music merits a special mention—rendered by the Budapest Symphony Orchestra, it integrates with great effect, gelling with both, the locale you are in and the pace of action you are



**BATHING WITH THE FISHES:** The game has some very interesting, beautifully crafted locales

facing. The gameplay is not all stealth, you can Rambo your way through most of the missions, finishing in minutes what stealth would have required hours to do. The cherry on the pudding lies in sneaking though—guns-a-blazing kills the essence of the title reducing it to an ordinary first-person shooter. Another reason to sneak is the AI: while enemies are morons once you enter a gun fest, they are excellent watchdogs. It is almost as if the action elements were added as an after-thought to the stealth layer to make the game more accessible to casual gamers. Consider this title if stealth gets you high. The action elements might disappoint.

Genre: Action ■ Developer: Io Interactive ■ Distributor: Milestone Interactive Software Ltd ■ Phone: 022-28381614 ■ Web site: [www.hitman2.com](http://www.hitman2.com)  
Price: Rs 999 ■ System requirements: Pentium III 550 MHz or equivalent, 128 MB RAM, 16 MB DirectX 8.1 compatible video card  
Rating: ★★★★★



## Grand Theft Auto III

Everything mommy wouldn't approve of

Life is a drag. You rob a bank, make a clean getaway and are promptly shot by the hitherto love of your life. Money comes first, honey. Life then reveals its Janus face, arranges an accident and offers a chance to reprieve your days of sin in the big city.

And sinning is such sweet sorrow: break into vehicles, more than 50 of them, ranging from sports cars to ice-cream trucks, from boats to buses. Listen to some 3 hours of great music (from classics to rap; you can even import your own MP3 collection into the game), as you take on the cops, clean out the lesser, wannabe-scum, perform stunts, rob old ladies at gun point and

harass girl scouts. Ok, so no girl-scout-teasing, but you get the drift—if it's naughty and nasty, you can do it. All in a day's work.

*Grand Theft Auto III* is set in Liberty City, a sprawling hive of no-goods that offers a narrative at once both linear and open-ended. Follow the central story to its logical end or shrug it off to take



**MEET INTERESTING PEOPLE:** and then rearrange their faces

on missions that call on you as a vigilante cop, a fire-fighter, a cab driver, a hit-man or just cruise around for hidden bonuses and packages. The music and voice-acting is top-notch, the AI lets you have a good time and the missions—more than you can shake a very large stick at—are always a blast. If you have nothing better to do for the next few weeks, pick up this game. Strike that, just pick up this game, life can wait!

Genre: Action ■ Developer: Rockstar Games ■ Distributor: e-xpress Interactive Software Pvt Ltd ■ Phone: 022-28870017 ■ Web site: [www.rockstargames.com/grandthefauto3/pc/main.html](http://www.rockstargames.com/grandthefauto3/pc/main.html) ■ Price: Rs 1,499 ■ System requirements: Pentium 450 MHz, 96 MB RAM, 16 MB T&L AGP/PCI video card ■ Rating: ★★★★★



## Mafia

Goes ahead and makes our day

You know the story. The Great Depression, hand-to-mouth existence. Along comes an offer you can't refuse and of course, you don't. So what if it involves working for the Mafia with a baseball bat in hand and a Colt in your waist pocket? People die everyday, the trick is to ensure that you are not one of them. *Mafia* excels in bringing a coherent and intriguing narrative of Tommy Angelo: a taxi driver's rise to fame and fortune, though gory.

Set in the late 1930s and played through a series of flashbacks, the game is set in the believable city of Lost Heaven—lost between the violent acts of rival mob bosses, Salieri and Morelli. Lost Heaven also plays host to a living ecosystem of cars, rival gangs, petty thugs and a bought police force. Chalking your meteoric rise to the ranks of the respected are some 60 authentic cars that you can drive and shelter in Salieri's backyard—the den you call home.



**KILLROY WAS HERE:** And he left his mark

Missions range from playing the cab driver and ferrying passengers, collecting protection money, assassinating, getting out of hairy shootouts and taking part in a vintage car-race. The experience offered by the variety of missions is always intriguing: forcing you to retry a scenario 'just once more', even though the process involved can be a drag. This is due largely to scripted

events—a certain party will rise from the dead to shoot you just because it was so programmed. A car will burn rubber at more than 60 kmph even though you have shot all of its four wheels, since the mission calls for a car chase. This leaves little room for improvisation and imparts a feeling of being led around the game by its designers. Two more negatives remove from an enjoyable experience—cops will stop and fine you for running red lights and speeding with irritating regularity and fellow gang members (not too bright, god bless them) will frequently walk into a shower of bullets and promptly die of too many holes.

But these issues are just passing clouds under the fresh canopy of blue and light that *Mafia* brings to the PC. In the end the game draws from its superlative narrative, surpasses its flaws and comes out as triumphantly fun, captivating, and a must-play experience.

**Genre:** Action ■ **Developer:** Illusion Softworks ■ **Distributor:** e-xpress Interactive Software Pvt Ltd ■ **Phone:** 022-28870017  
**Web site:** www.mafia-game.com ■ **Price:** Rs 999 ■ **System requirements:** Pentium 500 MHz, 128 MB RAM, 16 MB T&L AGP/PCI video card  
**Rating:** ★★★★★



## Firewall Systems

More than meets the eye

'A firewall system is more than just a product', so goes the title of Chapter 11. This line holds particular relevance for the general masses who tend to think of firewalls as a one-stop security solution against intrusions, viruses and what-have-you.

*Firewall Systems* is a thorough book. It begins with a chapter explaining why IT security is imperative and how firewalls help. This is quite important to understand where exactly a firewall reaches its limitations and needs to be supplemented by other means. 'TCP/IP Technology for Internet and Intranet', an excellent chapter, makes good reading even for those not necessarily interested in the nitty gritty of firewalls. It covers TCP/IP architecture, addressing, routing and common protocols—things anyone in the IT business can

ill-afford to ignore.

The reasonably clued-in will find much familiar material in this book. Chapter 5, 'Elements of a Firewall System' contains information on all common types of firewalls, including packet filters and proxies. The book also explains the applications of different kinds of firewalls and how they can be made to work for various environments. Firewalls are intrinsically tied into TCP/IP and by association, to everything else, including applications. While it would be beyond the scope of a single book to cover all these topics, this one goes some way to bridge the gaps.

The latter half of the book gets quite



technology and process-heavy. Chapter 13, 'Secondary Issues Relating to Firewall Systems' stretches a full 86 pages and covers everything from Loggin, evaluation and certification and auditing to Denial of Service attacks, virus scanners and personal firewalls. The final chapter covers theoretical topics that define the very basis of a firewall system or product. While not an easy read, it

does go on to explain where defects can show up in a system and how.

*Firewall Systems* is a very complete book, with much theory as well as practical usage. It is, however, not for the faint of heart and should be considered essential reading only if one is serious about enterprise-class firewall implementations.

**Publisher:** IDG India ■ **Author:** Norbert Pohlmann ■ **Distributor:** MITP-Verlag ■ **E-mail:** info@vmi-buch.de ■ **Web site:** www.vmi-buch.com  
**Price:** Available by order (approx Rs 1,951)  
**Rating:** ★★★★★



# Field day

Of hidden talents and uncommon interests

Everyone earns themselves a sobriquet at one point or the other in their life. Tony Blair has lately earned the unflattering US Foreign Minister tag and Billy Bob Thornton is serial groom in waiting after his fifth divorce. Jiten Gandhi, our in-house photographer earned himself the nickname Jiten *Jholer* during his recent trip to the north. [*Jholer*, *Mumbaiya Hindi*, from *Jhol* karma: *manipulate the situation to your advantage*.]

Now don't get us wrong, Jiten Bhai, as we call him, is as sweet and unassuming as they come. But he is also a wandering trader—pick up some candy from someone's table on the way to the Photo Studio, exchange it with someone for a cigarette which in turn will serve as rental for the headphones he borrows as a prop from someone else. He is known to pull out the most amazing things from his multi-pocketed photographer's jacket. But on the trip to the capital to distribute the Zero1 trophies, he astonished his fellow travellers Bhavesh Thakor, the Digit marketing manager and Shubendu Nath, our brand manager, with his tricks.

Now travelling with Jiten Bhai is not easy, the man keeps disappearing for short periods at the sniff of a photo opportunity. On the Rajdhani Express that was carrying the trio to the capital, food was a problem. Shubendu, is referred to as the black hole—any food within a 5 feet diameter is promptly sucked into his central gravity. Bhavesh, a newly married weight watcher was more than glad to place his food in Shubendu's orbit to watch it disappear. A little later, they realised that Jiten Bhai had done the disappearing act again. He returned a while later with a friendly waiter and asked them if they needed anything extra and within a few minutes, there were extra bowls of dahi, ice cream, soup and what have you.

Around tea-time, pangs of hunger struck Shubendu again. When asked what he would like to eat, he replied,

chicken tandoori. It seemed unlikely that he could get the bird, considering that this was a train and it was around tea-time. But Jiten bhai, as usual, did his vanishing act and appeared a few moments later with a waiter and chicken tandoori in tow!

But the best trick that Jiten bhai pulled was after the trio reached Delhi. After the round of visiting the Zero1 award winners and distributing the trophies, Bhavesh decided to catch up with some friends in Delhi. He made plans to meet Jiten and Shubendu back at the guest house and go for dinner—what

drink. Apparently, Jiten had befriended the local fruit vendor and coaxed him to lay out the spread from his own stock of fruits. After satisfying their pangs, the vendor invited them over for the next day and promised to cook them some mutton! How Jiten Bhai pulled this off, remains a secret! But it sure earned him the nickname!

## IIT Techfest

This year at the IIT Mumbai Techfest, of which Digit was the official Techfest magazine, our writer Srinivasan Ramakrishnan and copy editor Mitali Parekh were sent out to cover the event. Now IIT is the place where all the engineering students want to go—its lush lawns, spacious lecture halls and ultra-cool labs are stuff that engineering dreams are made off. Now Srini and Mitali aren't really the best of tag-team duo. One is a verbose chronicler of technology; the other is scissor-happy with words. One is a technology enthusiast, the other a nature lover. One speaks in garbled gigahertz, the other in... you get the point!

According to reports, Srini was like a wide-eyed six-year-old in Disneyland, running to each event, cheering the robots at Yantriki, dropping his jaw at the workshops and guest lecturers. Mitali, on the other hand, sat in the lawn and wondered how much of the country's cerebral resources was going to be exported to the United States come June-July. Meeting the IIT faculty was no less than meeting an A-list celebrity for Srini, Mitali couldn't understand why he was making all the fuss over a science/math teacher—subjects she didn't particularly take to in her academic years.

But the Aibo Soccer match had both techno-geek Srini and dog-lover Mitali clapping in glee. Stranger things have bonded people together—we didn't particularly mind as long as they got the Firsthand story out on time! ■




ILLUSTRATION: Mahesh Benkar


Bhavesh had forgotten was that he had the keys to the guest house. So our in-house photographer and the brand manager sat outside the guest house in 6 degrees of the Northern winter waiting for Bhavesh to return. Bhavesh, on the other hand was being forced by his friends to stay for dinner, so he calls up the guesthouse, still unaware of the fate of his colleagues and obviously, no one picked up the phone. Thinking that they'd left for dinner without him, he proceeded to dine with his friends. Meanwhile, Shubendu was making calls to his friends from the local PCO as Jiten Bhai wandered around the area. When Shubendu was done, Jiten Bhai led him to an open ground where a table was spread out and laid with chopped fruit and



Good Buys...

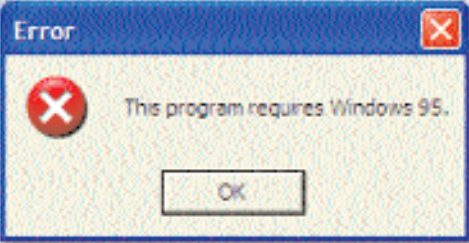


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▲ Charge it! Submitted by: Rahul Garg

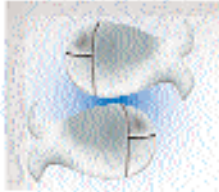


▲ Oops! Taken from the Net



Taken from the Net

We bring you your horroscope...

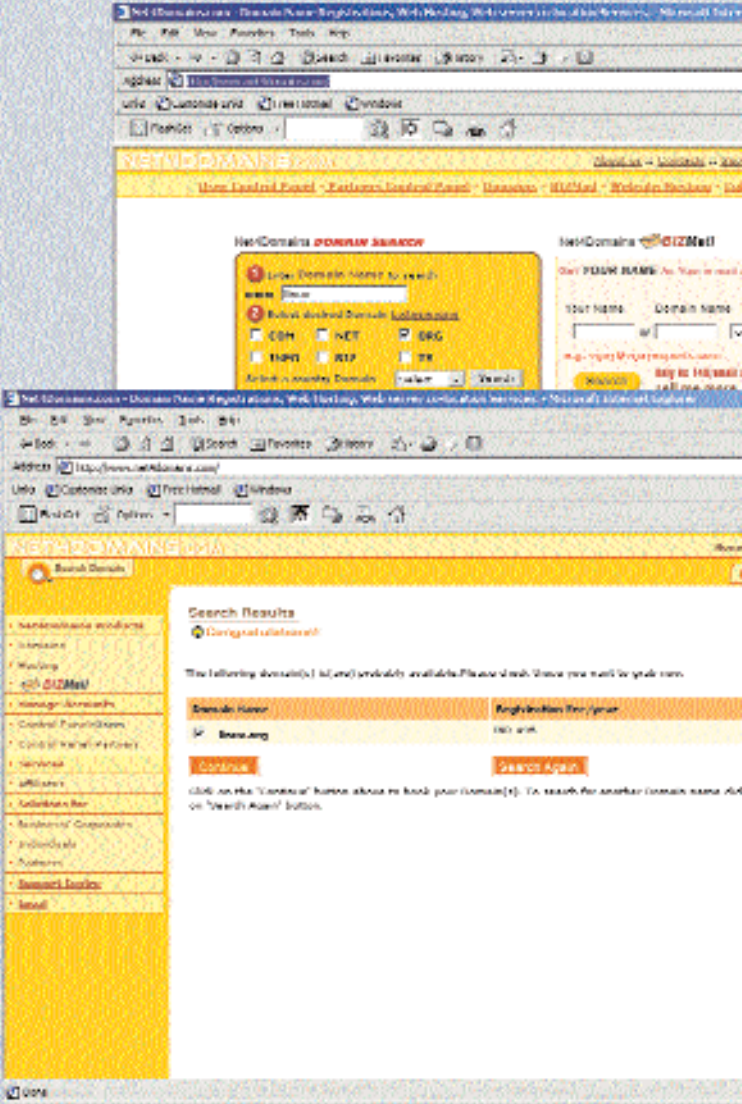


Pisces Feb 19 - Mar 20

The stars didn't have time for your horoscopes this month. They have been too busy playing Grand Theft Auto III. You might as well forget your next month's horoscope too.

Your chance to bite back!

Highlight the lighter side of computing. Mail your contributions to: Backbyte Digit, Plot D-222/2, TTC Industrial Area, MIDC, Shirvane, Nerul, Navi Mumbai 400 706 or e-mail us at backbyte@jasubhai.com



▲ Wonder what Linus Torvalds thinks of this  
Submitted by: Vivek Gite

Taken from the Net ▶

HELLO, IS THIS TECH SUPPORT...

CUSTOMER: "Can you copy the Internet for me on this diskette?"

.....

I work for a local ISP. Frequently we receive phone calls that start something like this:

CUSTOMER: "Hi, Is this the Internet?"

.....

CUSTOMER: "So that will get me connected to the Internet, right?"

TECH SUPPORT: "Yeah."

.....

CUSTOMER: "And that's the latest version of the Internet, right?"

.....