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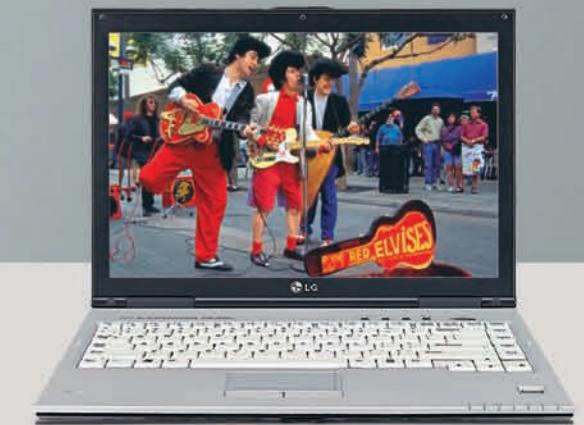
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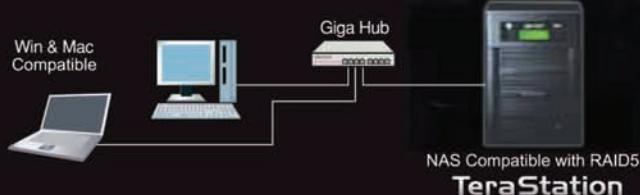
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Small is Big



“Recently, an interesting thing happened—technology got personal”

There's something innately human about being awed by expansiveness. We feel it when beholding an ocean panorama or boarding a Boeing 747-400 or standing by a towering skyscraper. Interestingly, in recent times it is the exact antipole that has caused the most profound changes in our lifestyles: the grandeur of smallness.

When technology was in its infancy a few decades ago, personal computers and telephones were clunky and virtually immovable (by today's standards). But then, technology was king. Consumers had to bring themselves to the technology in both the physical and the metaphorical sense—on the one hand, everything was too large to take with you and on the other, you were required to diligently learn the technology in order to use it productively.

Then something interesting happened—technology got personal. One of the first instances I recall is when the Sony Walkman hit the markets. More than being a new product, it spawned an altogether new way of perceiving products. Its success was proof enough—consumers wanted technology to go with them wherever they went, not the other way around. That's when the fascination for the diminutive took on importance. Today, we all know how 'un-cool' it is to be seen with a large laptop or a big cell phone. From TFT televisions to computers to mobile media players, small is indeed beautiful.

Driving this trend is a spawn of interesting technologies that make today's slick devices a reality. With the heart of most gadgets being processors or memory chips, silicon fabrication is the biggest driver of this trend. From the days when processors were forged using a 130 nanometer process, today's dual core processors use a 60 nanometer process that can fit over 280 million transistors on a silicon wafer the size of your pinky finger's nail. Such advances have resulted in unimaginably Lilliputian devices like portable music and media players with gigabytes of memory that can store hours of audio and visual entertainment—all in the palm of your hand. Other technologies such as MEMS (Micro Electro-mechanical Systems) have resulted in mechanical devices as broad as a human hair. No longer are these fantastic devices restricted to research labs and scientists—did you know that your home inkjet printer features such a technology in its printing nozzles, as does the little hard disk in your MP3 player? And this miniaturization isn't only restricted to hardware—from a time when your average audio CD would offer just 20 tracks of music, MP3 audio compression has upped that number to 120. You want video? MPEG-4 video compression technology can squeeze six high-quality movies onto a single DVD.

Today's consumers are the focal points around which technology is drawn in. It started with the desktop, then the laptop, now the palmtop... what next? I'm thinking wearable and implantable. Fantastic as it sounds, it is the next logical step. With our personal gadgets being such an intrinsic part of our lifestyle, I imagine that the 'functional' aspect of personal technology will find its way into being embedded into consumers. But then, there's another problem to contend with—the visual aspect. Take the case of a cell phone—even if they could, I doubt that Nokia would come up with a model that could be completely implanted into a human, with a micro-miniature speaker and microphone directly interfacing with human senses. After all, humans need something to flaunt, right?

| **Marco Angelo D'Souza**
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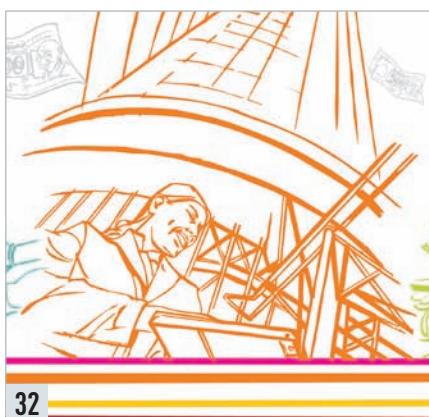
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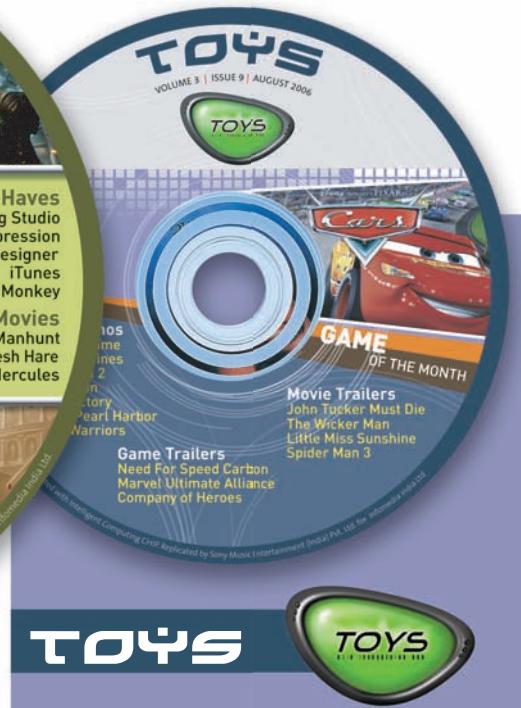
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THE WICKER MAN
LITTLE MISS SUNSHINE
SPIDER-MAN 3

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Town Square

Dear Netizens,

This month, you will have noticed the two banners on our web site. I'm sure that you're all wondering what those CHIP Forums are about—let me explain. Up ahead, we are planning to reach you through regularly planned interactions. This will include a wide variety of events, expos, round-tables and the like. Our first one is targeted at those in the business of creating the systems you buy—the system integrators, distributors and dealers. With this being the first of our CHIP Forums, look out for regular such interactions, many of which will be targeted at our readers at large.

This past month, our forum channels have been abuzz with several threads discussing the efficacy and capabilities of the new breed of web browsers—Opera 9, Firefox 2 beta 1 and IE7 beta 3. With all of the Big Boys on the verge of launching their “next big browser”, there certainly is much to talk about. Going by this trend and from the feedback we've received from you, we've put together a neat workshop on some nifty tricks on IE7's newest beta—check it out in our Application Feature section this month. Another interesting area is the ever-launching Windows Vista. We liked the interesting thread started by Kaushik81, discussing the proposed (and speculated) security measures that might be implemented in Microsoft's newest operating system. As with any new OS, it is very likely that it will not be as inherently secure as its predecessor though that is still left to be seen. In tracking the progress of this operating system, we've brought you a rundown of the enhancements and additions in the latest build of Vista, once again in our Applications section issue—check it out.

Through all of our tests, the most important aspect to ascertain in a hardware or software is its performance. We liked the thread started by Vinit that discusses the capability of operating systems when it comes to gaming. Clearly one of the most strenuous tasks a user can subject his computer to, gaming has always been a standing application

area for testing the capability of various system hardware. But evaluating the very operating system for gaming performance sounds like a pretty good idea—will the newer DirectX version coupled with Widows XP offer greater capability than a leaner predecessor of Windows that possibly runs older hardware drivers? What say you guys? Run a few tests on your home rigs and post scores of a few popular benchmarks on our forums. I bet the results should be interesting.

On the processor front, it clearly seems that our forum members are up to snuff on the newest out there—I saw a few interesting discussions around AMD's dual core processors and Intel's much-anticipated Conroe processor. From what we've heard, it seems that Intel has quite a few surprises up their sleeve with this family of processors. In the following month, look forward to an in-depth rundown on the capabilities of this new processing powerhouse.

Security is at the forefront of most users' minds today. In an interesting topic started by Anandk, he questions the security offered by Windows as against other operating systems. There's an interesting line of discussion that traverses Windows XP-Linux-Linux distributions, turning out into a pretty interesting debate!

We've been getting good feedback on the kind of games you would like to see on our cover disks, so keep that feedback coming in and we'll do our best to give you the latest crop. And if you need to know what our choice of components is for building the best gaming rig today, head over to our new Rigs sub-section beginning this month in our Hardware Feature Section.

Clearly, there's plenty of buzz happening on our forums—I think it would be a great idea if you guys could also SMS us your feedback and give us your opinion on the topics you feel strongly about—now how's that for cross media communication?

Until the next time, have a great month and a happy independence day! ■

| Marco D'Souza

G.O.A.L. Contest Winners

Congratulations to:

- Prachi Tiwari (JABALPUR)
- Kunal Kodape (KALYAN)
- Subhobrata Basu (KOLKATA)
- Shallabh Mittal (DELHI)
- Suansh Singh (DELHI)
- Sumit Gulati (NEW DELHI)
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- Satyendra Desai (GOA)
- Panchanan Pal (MADRASI)
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Letters

Dear CHIP,

This is my first interaction with you after years of reading your magazine. I've always wanted to have Windows installed on my Apple Powerbook machine. Your article on dual booting the Mac OS brought a sliver of hope. What I want to know is whether there is any way I can use software like Xom and Bootcamp to install Windows XP on my existing Mac-based system or whether these applications can only be used for Intel-based Macs. I ask this because I own a PowerPC-based machine (the original Mac) and not a new Intel Core Duo-based machine. Please let me know so that I can go ahead with the installation.

Arun Gupta

Hello Arun,

It's good to know that there are ardent Mac fans out there and thanks for the kind words about our magazine. Regarding your question, you unfortunately can't load Windows XP on your non-Intel based Powerbook as your PowerPC processor is not natively compatible with the Windows XP operating system. Since your machine is based on the PowerPC platform, not only the processor, but the RAM, mainboard and other peripherals are also incompatible with Windows XP as it does not support this hardware.

Since the newer Mac machines are based on an Intel processor, Apple has created the Bootcamp software that lets users boot into Windows XP and use the machine as a functional Windows XP-based machine. With these new machines, it even contains driver-level support for all of its hardware, making them directly compatible. While there are instances where you can boot into Windows XP on your exiting Mac (by using tools like iEmulator), these tools only emulate a Windows-based system and therefore exhibit significantly lower performance than a system natively running Windows XP.

Team CHIP

Dear CHIP,

This is the first time I'm writing to you. The June 2006 issue of CHIP was absolutely fabulous. The motherboard shootout was superb and it will help me while buying the next PC—whether it's for myself or for someone seeking advice from

Umesh Dahiwalkar

me. The cover story on HTPC was excellent and I've pretty much decided that my next PC will be an HTPC! Besides the article on AMD's FX-62, case-lighting and running XP on a Mac were also enjoyable reads. I also liked all the software, hardware and game reviews (especially *Tomb Raider Legends*). The World Cup goodies were a nice addition. You guys are doing a fantastic job, keep it up. However, I'd like to mention a couple of editorial glitches I noticed in the issue:

- On page 66, the number of SATA connectors in MSI RS-482M4-ILD motherboard is stated as two while it is actually four (check the MSI advertisement on page 31 of the same issue). I recently assembled a PC having this very board and I'm sure about this.
- On page 88, in place of the screenshot of K-Meleon, there is a picture of Ashampoo Magical Snap.
- On page 89, the contact for the avast! Home Edition 4.7 Antivirus is mentioned as 'Alwit Software'. Correction: the company's name is Alwil software.

Besides these, I have no qualms about the rest of the issue. IC CHIP has been an integral part of my life. I have been reading various tech magazines ever since I was in the fifth standard. It has been seven years now and I believe nobody can surpass the quality of IC CHIP. I bought my first copy of your magazine in January 2004 and have been subscribing since then. It has transformed me from just a wannabe geek to a full-fledged system-tweaker in under two years!

Somaditya Basak

Hello Somaditya,

You got us there! It sure looks like you go through our editorial with a fine tooth comb. We like that! Yes, we too noted those boo-boos when we saw our issue and we apologize for these errors—we've got our eyes peeled to make sure that such oversights don't overtake us in future.

Team CHIP

Dear Marco,

I am a T.Y.BSc. student of D G Ruparel college in Mumbai. I regularly read CHIP and I like what you guys are doing. I happened to read about your experience with buying a telescope in one of your past issues and would like to inform you about a user group that I'm part of called "Khagol Mandal" in Mumbai (Khagol translates to "globe" and "Mandal"

Superior Expandability for Efficient Workstation Solution

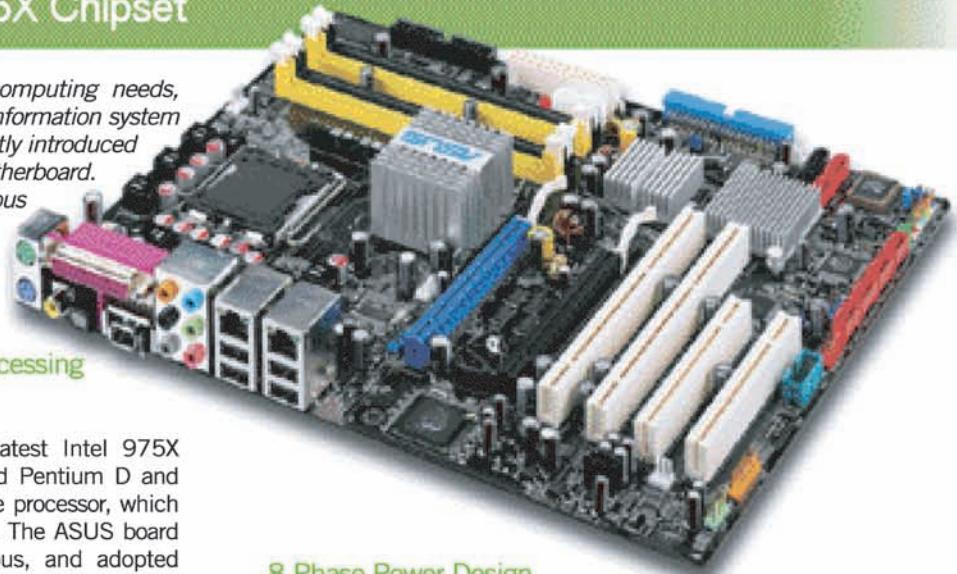
ASUS P5WDG2-WS Workstation Motherboard Incorporates Highly-Anticipated Intel 975X Chipset

To satisfy the various professional computing needs, such as financial analysis, geography information system or digital content creation, ASUS recently introduced the P5WDG2-WS workstation-level motherboard.

Besides computing power and continuous reliable operation, a true workstation also requires excellent graphics capability, and the P5WDG2-WS offers all that and more.

The Power Combo - Dual-core processing and 975X chipset

The P5WDG2-WS is based on the latest Intel 975X Northbridge and supports the advanced Pentium D and Pentium Extreme Edition 955 dual-core processor, which offers two independent 2MB L2 cache. The ASUS board also provides 1066MHz front side bus, and adopted Hyper-Threading Technology and Virtualization Technology for efficient multi-threads operation. Together with two PCI Express x16 slots capable of ATI CrossFire dual-graphics card functions and native dual-channel DDR2 800 support up to 8GB, the P5WDG2-WS offers excellent graphics and memory performance.



Dual-Gigabit LAN ports

For network connection, it comes with two Gigabit Ethernet ports that incorporated RLMT (Redundant Linkage Management Technology). When one connection is down, the other port can act as backup and maintain normal networking operation. In addition, the ports include teaming function, allowing you to use one IP address to double bandwidth for ultra high-speed data transfers.

Plan for future upgrades and expansion

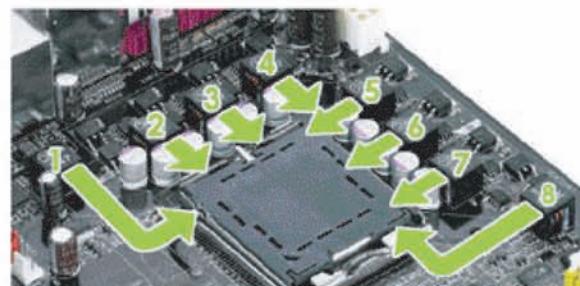
The input/output setup of the P5WDG2-WS is a work of art. Besides supporting dual-PCI Express x16 slots that enable the ATI CrossFire dual-graphics card platform, it also provides two PCI-X slots, two PCI slots, two IEEE 1394a ports, eight USB 2.0 ports and eight Serial ATA-II 3Gb/s ports for establishing two sets of RAID. Offering superior expandability, the all-new motherboard is made for resource-hungry applications of today and tomorrow.



PCI-X slot supports high speed transfer and superior expandability

8-Phase Power Design

The 8-Phase Power Design provides highly efficient operation to generate less heat (at least 15°C) than other conventional power solutions. It reduces input ripple current and output ripple voltage, which keeps CPU and VRM (voltage regulation modules) from suffering the risk of high power stress. It has the advantages of quick transient response and stability, especially beneficial when CPU requires more current immediately under heavy loading or overclocking mode.



8-phase power design generates 15°C less heat

Fan-less, noiseless cooling

Stack Cool 2 is a fan-less and zero-noise cooling solution offered exclusively by ASUS. It effectively transfers heat generated by the critical components to the other side of the specially designed PCB (printed circuit board) for effective heat dissipation. The result is a temperature decrease of up to 20 degrees Celsius!

Computing power, stability and scalability are the three main criteria for an ideal workstation, and the ASUS P5WDG2-WS was developed with those in mind. If you're building a top-of-the-line workstation, then you'll definitely have to check out this ASUS board.

Letters

Now you can SMS us!

Since we like knowing what's on your mind and what you think about our magazine, we now bring you another way to get in touch with us. Have something to say about a test review? Liked a feature story? Was the workshop useful? SMS us your feedback! Here's how:

For comments on a story, create the following message:
ICCO <Your comments here>

Example: ICOO The cover story was very useful

You can write as much as you want in your comment!

To rate a story, product review, etc look out for the story tag at the base of each article and use it as follows:
ICCP <Story tag> <Rating>
Example: ICCP PWS 5

The "Story tag" is mentioned at the base of every story in the magazine and the "Rating" is on a scale of 1 to 5.

Finally, send your messages to 7007.

Cheers!



is, as you know, a group of people). Our group consists of amateur astronomy enthusiasts with members scattered all over the country.

We arrange Night Sky Watching Programs for all our members and general peoples. We visit a field at Vangani (it's a station on the Central Railway close to Badlapur, about two hours from Mumbai city) where we can observe the night sky from a less polluted setting. We have several telescopes, including a large 8-inch diameter Newtonian reflector from which we study celestial objects like Nebulae, Galaxies, Star clusters and planets. Major programs include naked eye observations and getting to know the constellations better. Best of all, you needn't carry your own telescope! We'd like to have you and other interested readers here if possible—you can find further details about our group and its activities on our website at www.khagoland.com. Do visit us!

Aditya Desai

Hi Aditya,

It's interesting to know that there are active groups such as yours that pursue interesting and educational hobbies like stargazing and astronomy. I wish you all the best in your activities and hope that you find that many more CHIP readers are part of your forum!

Marco

Hi Marco,

I read your editorial with keen interest in the magazine. You are right—any of us who were into programming in the days of 'We are the world' did not have access to high-end, powerful computers and computers like we do today. Today's dual core processors are really far too powerful for the majority of applications.

In the good ol' 80s, writing code on microprocessors such as the 8086, 8080, Z80 on machines with a grand total of 64 KB of RAM was actually plenty of fun. I personally owned a Sinclair ZX Spectrum 48 KB of RAM, based on the Zilog Z80 chip. It was quite a challenge to write code within those confines but still we managed to see plenty of code and games emerging for that platform. People used assembly language to write code at the time, and cycles taken to execute instructions is what mattered most. I recall having experienced the benefits of using XOR A (which was a 1-byte instruction) in place of LD A, 0 (which translated to

a 2-bytes instruction), thereby halving the number of bytes taken to store the instruction, eventually reducing processing cycle times. Many games like Manic Miner, The Hobbit and JetPac on the Spectrum computer were so cool, given the limits on computer resources at the time.

Cut to today's era of highly powerful microprocessors—the machine does it all as there are virtually no resource constraints. We tend to leave it to the dual cores to take care of speed and performance, throwing to the wind the risks and costs associated with bugs and patches in software. As long as a developer is not liable for downtime and damage to systems caused by faulty applications or software bugs, this will go on. I can imagine what would happen if large software companies were to guarantee against breakdowns due to inefficient coding and bugs in its software—now that would be the day!

Rajan R Vaswani

Hello Rajan,

Software companies do really have it easy on themselves—unlike any other sector that manufacturers products, application developers clearly have the all-encompassing excuse of having no control on the types of systems their programs run on. The computer, being the multi-faceted and extensible device that it is, derives its value from being able to perform not just one task, but virtually hundreds. Manufacturers of other products—from audio systems to televisions to even cars and telephones—build devices around the premise of serving a single application using a closed computing system. Therefore, they can be conveniently held liable for any malfunction—not just within the software that controls it, but for any area within the system. Unfortunately for consumers, software companies do not suffer from that inherent disadvantage—if software companies were to be held liable for faulty software, they would probably revert by saying they would code for only one specific machine specification! But we all know that's not possible. Therein lies the reality.

Marco

With hundreds of SMSes sent to us, this new feedback system has evoked tremendous response. Going ahead, we're using what you're saying to incorporate changes into our content. Keep it coming!



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20th

Marching to
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P975 Platinum

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- Support DDR2-1066/800/667/533
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- Support 7.1 Channel Dolby MS HD Audio
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P965 Neo-V

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- 7.1 CH Hardware Audio with EAX HD
- Dual Gigabit LAN
- 10x USB 2.0, 3x IEEE1394
- Dual CoreCell with D.O.T. Express
- Heatpipe and Silent Sink design



K9N Diamond

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- Sound Blaster Audigy SE
- 7.1 CH Hardware Audio with EAX HD
- Dual Gigabit LAN
- 10x USB 2.0, 3x IEEE1394
- Dual CoreCell with D.O.T. Express
- Heatpipe and Silent Sink design



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- Base on VIA K8T890 chipset
- Support Socket AM2 AMD® Athlon® 64 X2/FX and Sempron® processors
- Support HyperTransport 2GT/s
- Support dual channel DDR2-800/667/533
- Integrated Chrome9™ graphics
- Support PCI Express x16
- Support 7.1 channel surround audio



NX7900GTX-T2D512E

- Core: 650 MHz, Memory: 1600 MHz
- Memory Interface: 256bit
- High speed DDR3 design
- Nvidia® CineFX® 4.0 Engine,
- UltraShadow II Technology
- Intellisample™ 4.0 Technology
- Open GL 2.0, Shader Model 3.0, DirectX 9.0c
- True high dynamic-range (HDR) lighting support
- Support up to 2560x1600 in flat-panel display
- SLI™ Technology ready



NX7600GT-T2D256E

- Core: 560 MHz, Memory: 1400 MHz
- Memory Interface: 128bit
- High speed DDR3 design
- Nvidia CineFX 4.0 Engine,
- UltraShadow II Technology
- Intellisample™ 4.0 Technology
- Open GL 2.0, Shader Model 3.0, DirectX 9.0c
- True high dynamic-range (HDR) lighting support
- Support up to 2560x1600 in flat-panel display
- SLI™ Technology ready



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What about DRM?

Digital rights management restricts you from creating copies of music files. We demystify some of the more popular DRM methods used

Imagine you have bought a new coffee machine and you are allowed to use coffee beans of the Nescafe brand only. That is not all, the manufacturer also dampens the otherwise unrestricted joy that coffee offers: You can brew only three cups of coffee in one day, not more than that! DRM (Digital Rights Management) is somewhat similar to this scenario as the manufacturer decides how you should use the purchased goods. For instance, if you buy music CDs or DVDs, you don't own the content—"em", you only receive the right to play them. Where, how and on which player is determined by the intellectual property rights of Digital Rights Management.

Today, DRM is in-built in several devices such as DVD players, iPods and Windows-based PCs. Other devices will soon follow.

The only thing that the Intellectual Property Rights does not determine is the output devices that can play the latest blockbusters. But it also stipulates whether or not a user is allowed to create a copy. CHIP here presents the most oft used DRM methods and shows who uses them. Read on to know about the restrictions in DRM and the sensibility of individual copy protection mechanisms, (provided they have not been cracked already!)

Fairplay copy protection

Used in iTunes, iPod

Fairplay—that is what Apple has christened their DRM copy protection. Fairplay secures the music and video files in iTunes and in an iPod. However, this special format is

supported only by those computers on which the QuickTime media-player is installed and set up.

Apple has been using DRM right from the time it introduced the online music shop iTunes to the Web world in April 2003.

How Fairplay works: A protected media file, video or audio, can be played only on five computers at a time. For that, every computer must be authorized to have an iTunes store and activate it. If you want to use the data on a sixth computer, you must first remove another PC from the list of authorized computers. This can be done comfortably with a click and using the iTunes Store. Protection on the iPod principally works in the same manner. Here, you can play files from up to five registered PCs.

Those who want to secure their music collection on a CD can do so as many times as desired. A compilation of several songs, i.e. a playlist, can be burned only seven times. After this, you either need to change the sequence of the songs or the compilation altogether. In this manner, Apple wants to prevent the mass production of individual playlists. Incidentally, while burning audio CDs, Apple removes the Fairplay copy protection automatically, since the audio player cannot read it.

However, it is different in case of video files. These files can be burned only as data discs and thus remain protected. Such video CDs in the MOV format can be played by all users who have Quicktime, provided they are already authorized to use the iTunes store. However, the owner of an MP3 player that does not support the Apple format M4P must take the longer route and burn an audio CD, after which the files are converted into unprotected MP3s using a free MP3 encoder, like LAME, for example.

CSS copy protection

Used in DVDs

The CSS copy protection is found on almost all commercial film DVDs. The CSS process (Content Scrambling System) standardized in 1996 was developed by Toshiba and Matsushita. The

CCA (Copy Control Association) holds the license rights for that; CCA is a non-profit organization of the film and consumer electronics branch.

How CSS works: This type of DRM consists of two parts —the actual protection against copying and the country code key, which allows the reproduction of DVDs only in specific countries. The copy protection as such is based on a complicated code system, which is encoded using a 40-bit key. In reality, the CSS module of DVD players decodes the DVD using a built-in key.

The second part of CSS, the country code protection RPC (Regional Playback Control), divides the DVD world in different, incompatible regions around the globe. This implies that a newly released American DVD cannot be played on European players. Only if one has a player that can identify directions, Code 2 for Germany can, he or she can watch the DVD. The country code protection was introduced on the insistence of the film industry.

AACS copy protection

Introduced in HD-DVD, Blu-Ray DVD

After the failed attempt to secure DVDs using CSS protection, the film industry, together with electronic goods manufacturers are now relying on a new variant—the AACS protection. This is used in the new HD-DVD and Blu-ray drives. However, so far, the participants of both the Blu-ray and the HD-DVD Associations have not yet reached an agreement regarding the specification of the AACS protection.

This has delayed the delivery of the player and drive, which was planned for the month of May this year. The manufacturers had to wait for the copy protection key and they required two to three weeks to install this into their devices. How restrictive the AACS protection will be in its final avatar is also uncertain as yet.

How AACS functions: It surpasses normal copy protection. The objective is to eventually have a complete DRM environment without any gaps and loopholes—everything from the DVD to the television set must be secured.

The basic protection consists of one

128-bit key, the player and HD-DVD or Blu-ray disc. The right holders, mostly the film studios, can determine whether the user will be allowed to only watch the film or also transfer it on a portable device like an iPod with video functionality. To ensure that the content of the new disc cannot be transferred on the hard disk, the new DVDs and Blu-ray discs are equipped with a hardware copy protection.

In addition to Blu-ray drives, the manufacturers also use BD+. This is a small Java program that runs in the background and checks in real time whether any unauthorised program is measuring the video stream.

The copy protection HDCP (High Bandwidth Digital Content Protection) comes into play if the content of the HD-DVD or Blu-ray disc is encoded via AACS. It codes the data en route to the television. If the device is not in sync with the latest technology, the print of the film turns out to be of bad quality.

There is no exact specification, therefore, no crack either. But the first loophole has just been discovered—the transfer between player and television functions happens via HDCP encoding and hackers have now found a way to decode the signal with the help of a device called a Spatz Box. When this is connected to a HDCP-encoded outlet, the signal is decoded. However, this device is illegal in several countries using Blu-ray and HD-DVD.

AACS protection is no problem for all those who own the latest generation of televisions and DVD players. The new devices can be identified with their HD-ready logo. Even PC components like graphic display adaptors are available with the HDMI connection. Those who don't own a HD television can watch new films but in DVD quality. Otherwise, AACS functions like other copy protection types—if one does not want to make any copies, one would hardly pay heed to the new restrictions.

PVP - OPM & PUMA copy protection

Introduced in Windows Vista

In the year 2005, the then latest DRM versions of Microsoft for audio and video were cracked. Copy protection experts

have been working on a new model since then. By the end of this year, what they aim to do is launch Windows Vista in the market along with the next-generation DRM protection. DRM is based on PVP-OPM (Protected Video Path – Output Protection Management) for video files and PUMA (Protected User Mode Audio) for audio data.

How PVP-OPM & PUMA work: Similar to the AACS protection, Vista also checks every play-only recorder. If a program wants to playback a video file, Vista opens a special process environment that cannot be changed externally. The operating system checks all involved components for their integrity. The system thus prevents the working memory from being read and the film being copied on another unlicensed medium. It checks approximately whether the driver of the graphic display adaptor was manipulated or if anybody had tried their luck directly with the adaptor. Only when all components show an okay sign, Vista gives the green light for playing them.

The same is applicable for PUMA, the DRM protection for audio files. Digital outlets that are not certified are disconnected by Vista instantaneously. The hitch is in all probability, you will then require special hardware, without which you cannot play the DRM-protected files.

There is no crack for PVP and PUMA as yet, but history has shown that even in case of apparently secure mechanisms, safety loopholes are bound to pop up sooner or later.

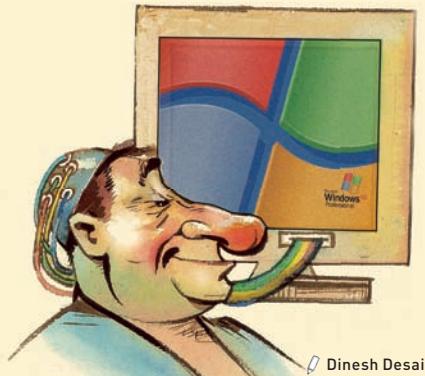
True, the new Vista DRM protection disconnects outlets, hinders the playing of unlicensed media and blocks anything from being copied on to the hard disk. But it definitely sounds worse than it actually is. As everything that was played till date, functioned even without Vista. However, depending on what the manufacturer has decided, the new media are being more and more restricted as regards their use.

Whether the normal user can then burn a backup copy of the latest music CD is a matter that will be decided depending on the rights that will be granted. ■

| Fabian von Keudell

Mind-controlled PC

Scientists researching on paralytic patients have seen a glimmer of hope as a 25-year-old man suffering from limb paralysis has been able to move a computer cursor, open e-mail and even control a robotic device simply by thinking about it.



Dinesh Desai

Scientists are working with a sensor named BrainGate, developed by Cyberkinetics Neurotechnology Systems Inc, Massachusetts, which involves implanting electrodes in the brain to perform self-directed activities. According to Cyberkinetics, BrainGate is a neural interface system that enables a paralytic patient to perform activities, which involves limb movement. The system allows activities beyond typical computer functions and includes control of objects in the environment such as television, telephone and lights.

BrainGate is based on a technology that can sense, transmit, analyze and apply the language of neurons. It consists of a sensor that is implanted on the motor cortex of the brain (area responsible for movement) and a device that analyzes brain signals. The system reads the signals generated by the brain and then interprets and translates them into cursor movement. This offers the patient an alternate control over a computer or a mouse.

Professor John Donoghue of Brown University and the chief scientific personnel of Cyberkinetics informed that so far it was easier to insert signals into the brain, but getting them out of the brain was a real challenge. The BrainGate Neural Interface System has overcome this challenge and is a big leap forward in the field of neurotechnology.

Touch therapy on 3D images

The mouse or stylus pen will be a thing of the past as now it is possible to navigate through computer images using your fingers. Microsoft has been working on making this study a possibility and has transferred license of this technology (aptly named TouchLight) to a California-based start-up company, Eon Reality.

Eon will be using TouchLight in its existing range of interactive products for commercial, auto, aerospace and defence industries. These products offer 3D displays but don't let users interact with them via touch.

TouchLight offers a user the advantage of using his hands to tilt or pan the 3D image of an object. So what you have read in fantasy novels and watched in movies—such as *Minority Report*, in which Tom Cruise's character is able to prevent crime by pulling up information on a glass screen by just a wave of his hands—is a reality.

However, people using TouchLight

don't have to use special gloves, glasses or headsets unlike in the film.

To manipulate the images with hands, a transparent sheet of acrylic plastic (which acts as the screen), two infrared video cameras, one still camera and an infrared illuminator (projector) are placed behind the screen.

When a person stands in front of the sheet, he naturally faces the cameras. Both the video cameras work together to decipher whether the person standing is within the screen area or above it. The still camera captures the image of any object and projects it on the screen.

The movement of the person's hand is continuously captured by the video cameras to create a continuous feed of information for the computing device installed in the infrared illuminator. The inbuilt device then matches the hand movement and the still photograph so that the user can manipulate the size or the orientation of the image.

Fabric keyboard for handhelds

Users complaining about tacky handheld keyboards can stop here as an all-new washable wireless fabric keyboard is available now. Eleksen Group Plc, an electronic interface designer group, has built this keyboard based on their proprietary technology called Elek Tex.

Elek Tex is basically a unique electro conductive fabric, which endows the keyboard with two outer layers of conductive textiles separated by a partially conductive inner layer.

The keyboard features a 63-key QWERTY layout and measures 306 mm by 114 mm. The battery life, as claimed by the company, is a decent 10 hours; one good aspect is that the keyboard comes with a complementary battery case, capable of holding two AAA-sized batteries.

To connect the keyboard to your handheld, first hit the power button; once

the driver is installed on your handheld, the keyboard instantly connects to the device via Bluetooth, which is indicated by the flashing LED. You are then ready to type on it!

However, reviewers have complained



about having to type hard on the keyboard. What is most annoying is every time you press a key, the handheld emits a click sound. Also, the keyboard does not have any rubber feet to hold it tight on a shiny surface, therefore leading to frequent slips.

The keyboard supports Symbian, BlackBerry, Palm and Windows Mobile devices and is available for £40 in UK.

Droids' derring-do on NASA space station

Guess what—the shot of Luke practising with three floating droids in *Star Wars I* is a reality now. Inspired by the movie, students of MIT Space System Laboratory developed three spherical droids, capable of flying in precision information.

The droids, part of project SPHERES, are presently being tested to build “smart” satellites (satellites that can control themselves). It is being speculated that these robots may one day hold the key to building everything from huge space telescopes that can peer deeply into the universe to constellations of small, and highly affordable satellites that can monitor changes on earth.

The test involved sending these droids to space as well. During the test, the satellites communicated with one another via radio; an additional radio channel was used by the crew members to send software and retrieve test data from them. They also performed some rudimentary docking maneuvers as part of the test.

The first of these three spheres arrived

in April this year aboard a Russian Soyuz spacecraft. A second arrived with Discovery, currently docked at the International Space Station, and the third is slated to arrive on Discovery in December.

Each orb weighs nearly nine pounds. Twelve thrusters use gentle puffs of carbon dioxide to change the orb's orientation and location. Each orb can figure out its location by using 24 tiny microphones to listen for chirps from pager-sized ultrasonic beacons placed on the station's walls.

Astronomers perceive these droids as the building blocks of space-based telescopes called interferometers (telescopes with several mirrors spread out over large distances). For a space interferometer to work properly, the position of each element with respect to the others needs to be accurate within an inch or so as they shift their gaze from one object to another. After the third mini-satellite arrives, some basic interferometer configurations will be tested to see how precisely mini-satellites can hold their positions.

Broadband calling

In recent years, new ideas have spawned to make communication easier; Internet telephony is one of these. A huge number of people today keep in touch by making PC-to-PC or PC-to-phone calls. To take communication to the next level, technologists have designed mobile phones that can use broadband to make calls. Of course, you need a broadband connection to exploit the benefits of making calls through the Internet; also, this service has to be supported by your service provider and the phone manufacturer.

Motorola, in collaboration with British Telecom, provides this service on its RAZR V3B and V560 models, in UK. To avail this service, the user needs to install a wireless home hub from British Telecom. However, calling is restrained to indoors only. This is of course a glitch in the service, something which Nokia plans to do away with, although they have revealed no details about a tie-up with any service provider. Recently Nokia launched two handsets—the 6136 and the N80 that are capable of broadband calling.

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- Red-eye
- Fog
- Low light

Q2 What is the term used to cut a portion of a picture out from the original?

- Cut
- Chop
- Slice
- Crop

Q3 Pick the odd one out:

- JPEG
- TIFF
- AVI
- PSD

Q4 CS2 is the acronym for:

- Classy Software 2
- Creatively Stylish 2
- Creative Suite 2
- Creative Software 2

Q5 Which is the color space used for printing?

- R, G, B
- C, M, Y
- TIFF
- C, M, Y, K

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RFID bartenders

One are the days when pub-hoppers can rush out of bars without paying for that last-minute drink or two that they had ordered; new technology won't let guzzlers circumvent payment. Hotels and bars are testing RFID tagged kegs to devise a new way to track the loss of excess beverages. These kegs will be connected to a tilt switch and will be instrumental in updating the Internet database, every time a drink is poured to a customer.



The software not only records how many times a bottle pours, but also considers the tilt of the bottle, duration of the pour and the bartender's pouring style as different factors; based on these factors the software calculates how much liquid actually parts from the bottle.

David Teller, CEO of Beverage Metrics (a Miami-based beverage-monitoring software company), explained that the software built by them converts the tilt into an estimated volume, and the conversion is automatically perfected, based on the history of each bottle. Hence, it becomes more accurate over time and adapts to each bartender's habits. The application can even track whether a pour is billed or not; this way, it also adjusts the billing of a drink served. Additionally, the application can even calculate the recipe of a serving and knows when to adjust long pours into short pours or add short pouring sequences!

The keg consists of a housing, attachment, on/off switch, tilt switch, TI microchip, battery and RF circuit. It is available for around \$5. The cost is likely to come down to less than \$2 once more and more hotels and bars start adopting it.

Fuelling radio-controlled cars

Battery driven radio controlled cars are going to be powered by nitro fuel—that's the latest from Hasbro Inc, which launched two new cars—the Nitro XRC Ricochet and the Nitro XRC Revolution MT. These vehicles run on nitro fuel and can also be radio controlled.

The cars can go up to a speed of 25 miles per hour, which is three times faster than a standard battery driven car, and even sounds and smells like a real engine. Along with these features, both these cars flaunt hot looks and can even perform stunts on and off the roads; some of these ricochet stunts are bouncing, skipping off the surface and even rebounding.

The cars have an innovative ignition system consisting of electric starters and a unique fuel delivery system that enables quick acceleration.

Both the cars are targeted towards older teens—aged 16 or more and should bridge the gap between retail stores and the hobby-grade radio control market;



they are also likely to attract enthusiasts to adopt this hobby.

The cars are slated to be launched in October this year at a retail price of \$179.99 and \$129.99. However, competition is likely to follow with brands like Jakks Pacific and Spin Mater planning to introduce their radio-controlled vehicles—the Fly Wheel XPV and Storm Launcher (*picture above*) respectively. Both the cars can run on grass, concrete and a variety of other terrains. They will be priced at \$59.99 and \$79.99 respectively.

Viewing X-Ray on your smart phone

The next time your doctor reviews your X-Ray, don't be alarmed if he looks at his smart phone instead of a wall-mounted display. Chances are he is using a new system that gives him the ability to view the X-ray on his smart phone rather than on a standard radiography display.

The new ICIS PocketPACS from Global Care Quest is an application that can access images from Picture Archiving and Communication Systems (PACS) and send them to a handheld device or smart phone via wireless Internet or a high-speed cellular phone network.



Global Care Quest has developed Integrated Clinical Information System (ICIS)—a health care software that helps a doctor to be in touch with the patient at all times. The application delivers important patient information to doctors irrespective of their locations.

Besides image display, the application offers advanced viewing functions like zoom, pan, multi-slice scrolling, Cinemode, window-level contrast adjustments, and image inversion and rotation. It can display images at the maximum screen size and resolution the handheld is capable of. In most cases, the image quality is suitable for medical assessment. Apart from displaying images, the application also provides real-time access to electronic medical records including the physician's notes, laboratory records and vital stats from bedside monitoring devices.

ICIS PocketPACS integrates with nearly every PACS system. It is slated to be available in October this year.

The call of 'cognitive computing'

After much ado about artificial intelligence, scientists are poised to offer new wine in a new bottle—cognitive computing, which is essentially an upgrade of artificial intelligence.

Today, scientists have access to torrents of biological data on how the brain performs. According to Eric Horvitz, a Microsoft researcher and president-elect of the American Association for Artificial Intelligence, researchers today are driven to the phrase “human-level A.I.”

Cognitive computing is more of a research discipline rather than an industry; presently it is being used to modify and improve voice recognition systems and computerized cameras that can recognize faces and objects. Apart from that, it is also being used for innovations in areas of voice controlled systems and advanced artificial reason techniques, now routinely used in inexpensive video games so that the actions of characters appear more life-like.

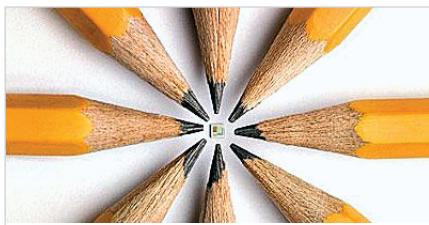
More striking advances are likely to be spawned from new biological models of the brain. Researchers at the Ecole Polytechnique Federale de Lausanne in Switzerland have used an IBM parallel supercomputer to create the most detailed three-dimensional model of a column of 10,000 neurons in the neocortex—a key step to deciphering how the brain works.

The goal of this research is to delve deep inside these little columns and decipher how they are built with exquisite detail. One can now zoom in onto single cells and watch the electrical activity emerging. The “confabulation” theory, which is a hypothesis about how the brain makes decisions, is also being touted. One such confabulation model showcased how the application was able to read two sentences from *The Detroit Free Press* and then created a third sentence that was a natural extension of the previous two.

Versatile microchip gathers momentum

Technology is getting more and more innovative every day. A recent development is using the storage capacity of a chip in a unique way. Memory Spot, the prototype tiny chip from HP, measures only 2 to 4 mm square, which is about the size of a grain of rice, and holds an in-built antenna for exchanging data.

The chip is so tiny that you can stick



it on any surface—on tamper proof seals used on medicine packaging, on a patient's wristband, identity cards and passport and even on paper documents. The versatility of the chip will enable its usage across multiple industries.

The chip, developed on CMOS design (a widely used, low-power integrated

circuit), can hold 4 Mb of data (capable of holding several images or dozens of pages of text) and can transfer it at a speed of 10 Mbps, which is 10 times faster than Bluetooth, for example.

To access information, the chip is placed close to a device such as a cell phone, PDA, camera or printer and the stored data is transferred to the device wirelessly in a matter of seconds.

The chip has a couple of advantages over RFID—first, it will be less costly compared to RFID tags; one such chip would cost somewhere between 10 to 50 cents. Second, while an RFID tag can store details of only username or password, or serial numbers, this chip can hold much more information.

If you stick this chip on a movie DVD cover and place it close to a PDA or smart phone, it will reveal details of price, identification information and even a small trailer of the movie on the display of the phone, thereby enabling the buyer to take a better buying decision.

Designer lunar homes

Astronauts traveling in space for long durations will have a decent place to stay as a team of architects and engineers at Johnson Space Center are exploring designs for living and working quarters on the moon and beyond. A unanimous decision has been taken on the basic structure, which is that of a tube. There are different modules to choose from—multistoried vertical or simple horizontal ones.

The ideas are being translated in plywood and foam board to test the optimal size of crew quarters to the desirability of putting a half bath (a bathroom that has a wash basin and a toilet, but no bathtub or shower stall) close to the air lock.



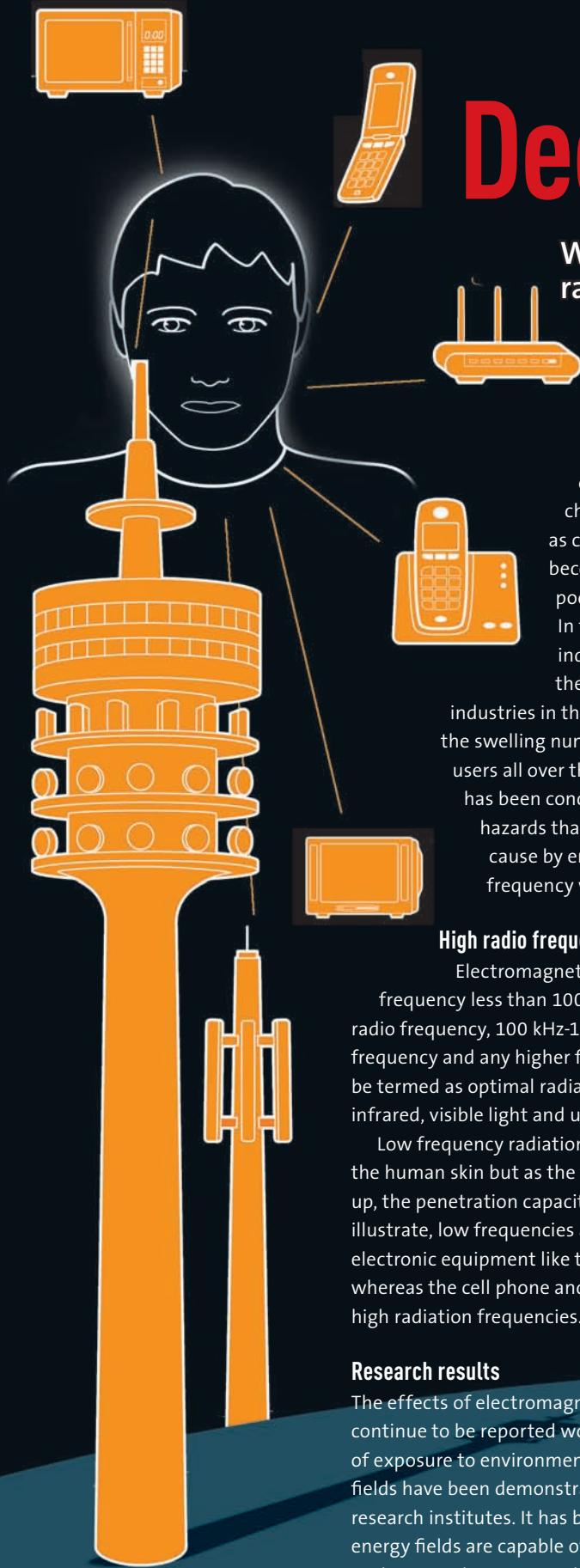
Dinesh Desai

Larry Toups from the Space Center's Advanced Projects Office said that over the next five years they would be using only low-tech material to decipher future needs such as radiation shielding or dust control. Meanwhile, the debate continues on the mundane aspect of whether to include exercise equipment or not, as the space station has exercise gear to help astronauts blunt the effects of weightlessness.

Toups along with his colleague George Rains showcased a prototype of the horizontal habitat module to a group of people. The module is 37 feet long and 15 feet in diameter. It is 9 feet longer and a foot wider than the main space-station modules. Also, four variants of crew quarters, ranging from 221 cubic feet to 418 cubic feet are being used for dimensional studies. This configuration supports a module with two floors; the crew would live upstairs while the ground floor will consist of a galley, common area, life-support equipment and an airlock large enough for four space-suited astronauts.

Deep Impact

What risks are we being denuded to by radiation. CHIP delves deeper...



The cell phone has become an integral part of our daily lives, even for children and teenagers as cell phones have become their loyal pocket companions. In fact, the cell phone industry is one of the fastest growing industries in the world. Today, with the swelling number of cell phone users all over the world, there has been concern over the health hazards that cell phones can cause by emitting radio frequency waves.

High radio frequency

Electromagnetic fields with frequency less than 100 kHz are called low radio frequency, 100 kHz-100 GHz is high radio frequency and any higher frequency would be termed as optimal radiation in the form of infrared, visible light and ultraviolet.

Low frequency radiation may penetrate the human skin but as the frequency notches up, the penetration capacity slides down. To illustrate, low frequencies are emitted from electronic equipment like the television, whereas the cell phone and microwave emit high radiation frequencies.

Research results

The effects of electromagnetic fields (EMFs) continue to be reported worldwide. The effects of exposure to environmental electromagnetic fields have been demonstrated in several research institutes. It has been found that these energy fields are capable of causing damage to the central nervous and immune systems of the human body. Chronic exposure to EMFs are associated with significant changes in

some physiological parameters. Research has confirmed that amplitude-modulated radio frequency radiation can induce responses in cells of nervous tissue origin from different animal species, including humans.

The possible effects of radiofrequency (RF) radiation on prenatal development has been investigated in mice. This study consisted of RF level measurements and in vivo experiments at several places around an "antenna park". At these locations, RF power densities between 168 nW/cm² and 1053 nW/cm² were measured. A progressive decrease in the number of newborns per dam was observed, which ended in irreversible infertility.

Intensive research also points out that high frequency radiation is responsible for more serious illnesses such as cancer. To discover potential evidence on this, WHO (World Health Organization) conducted a survey (carried out by Interphone under WHO's direction)

SAR: Cell phone radiation intensity

In 2001, all leading cell phone manufacturers joined hands to devise a measurement process for determining the radiation levels emitted by cell phones, known as SAR (Specific Absorption Rate). This measurement shows the intensity of radiation per watt, emitted by a cell phone to the user's head at maximum transmission power. This intensity is then divided by the user's body weight.

In order to get realistic measurements, a replica of the human head called the "Phantom" was created. It had sensors to capture cell phone radiation. Within a interval of 6 minutes, the maximum radiation captured would be converted into SAR values. The lower the SAR, the weaker the radiation levels emitted by these phones. If the value for a particular cell phone is below the allowed level (2.0 W/kg for body including head or 0.08 W/kg for body only) then it qualifies to be sold on the market.

in 13 countries with a total of 15,000 respondents. The verdict was cell phones and DECT telephones don't increase tumor risks even when used intensively everyday. Frequent usage or staying close to a DECT base station will not expose one to the risks of cancer.

Ten years ago, cell phones used the C-type network, thereby emitting high radiation intensity compared to modern cell phones that operate on the D and E networks and are less risk prone. Research results from the Nova Institute regarding "Observation of EMVU caused by W-LAN" in Huerth, Germany in the year 2004 also suggested that radiation threats from intensive usage of networks were far less than what was predicted to be. For instance, the radiation level next to an access point only records a 0.0025 W/m², a figure which is a mere 0.0025 percent of the maximum threat level.

In the year 2005, the REFLEX Research Association after carrying out experiments in 11 laboratories proved that radio waves can cause gene defects in specific cultured cells. Measurements are taken based on the intensity of radiation emitted akin to using a normal cell phone placed against the ear.

Prof Dr Adlkofer, a program coordinator backed by Uni-Europe said that tests done in reactor-tubes cannot be transferred onto humans as yet. Further studies need to be carried out before coming to a conclusion. Recently, a survey in the form of the "Radio Waves Research Program" has been conducted in Germany to derive whether radio waves can actually cause sleep disturbance.

Imposing guidelines

There are no conclusive results on the negative consequences of radiation, hence it is difficult to set tight guidelines. In case of thermal radiation, for example, it has been proved that thermal radiation causes the body's temperature to increase by 1 degree celsius or less and according to experts, this is not hazardous to health.

As far as setting guidelines are concerned, the German Federal Ministry in charge of communications, for example,

has set different limitations for different frequencies. With the help of a calculator, the limits can be easily derived. Frequency $\times 0.0050875 =$ Limitation value [W/m²]. For higher radiation frequencies, the limitation value is usually around 2-10 W/m². For 2 GHz and above, the maximum value is set at 10 W/m².

If these guidelines are followed, thermal effects emitted by electronic equipment will not be a case to worry about. No guidelines have been set yet for non-thermal effects.

Does electromagnetic pollution cause any damage?

Despite the panic that has been caused because of the panoply of reports and stories covered by the media, the conclusion we have arrived at in this article is different.

The direct intensity of high radiation frequency from equipment sources are still far below the maximum limit, only one hundredth of a percent. Nearly all equipment such as access points for W-LANs and Bluetooth or DECT base stations fulfil guidelines set by the Nova Institute in Germany. So there is no reason to worry. However, as research on the topic of health risks caused by radiation continues, it will take a while before we can confirm about the system damages that it can cause. The box on the right provides a few effective tips to reduce electromagnetic pollution your environment is exposed to. ■

| Loh Ken Wei (Gusdiharto Pratomo)

Links

<http://www.bfs.de/bfs?setlang=en>

Researches based on electromagnetic pollution

<http://www.fcc.gov/cgb/sar/>

What is the SAR value of your cell phone?

http://imagine.gsfc.nasa.gov/docs/science/know_l1/emspectrum.html

Electromagnetic pollution

<http://www.verum-foundation.de/cgi-bin/content.cgi?id=english>

Research results from REFLEX

Tips: Reducing electromagnetic pollution

Here are a few tips that you can follow to minimize electromagnetic radiation:

- **Cell phone radiation:** Avoid talking to people when you realize the signal is not up to the mark because the cell phone will continue to try sending signals at its highest capacity to reach a relay.
- **Keep calls short:** A very long phone conversation directs radiation effects to the head. Use SMS instead as signals through this are shorter and radiation is not directed to the head.
- **Avoid using cell phones in cars:** The car's frame can bounce signals. To overcome this problem, the cell phone would send stronger signals, which means increased radiation.
- **Use hands-free:** Radiation from Bluetooth headsets are far lower compared to when not using headsets. It's even better if you use a wired hands-free kit.
- **Low SAR value in cell phone:** When buying a new cell phone, choose one with a low SAR value, probably below 1.0 W/kg. This already applies to new phone models such as the Samsung SGH-1300. In reference, the safer "Blue Angel" network, used in some countries, only allows phones up to 0.6 W/kg.
- **DECT phones:** Get rid of base stations (those that constantly emit signals even on standby mode) near to you. Better still, place it outdoors. If you are looking to purchase a new model, choose one that stops emitting signals when the unit is connected to the telephone.
- **Wi-Fi radiation:** Turn off the access point when not in use. If it is too troublesome, choose one that offers choices to lower the intensity of transmission power.
- **Micro-wave radiation:** Don't stare into the microwave oven when turned on. When food is heated in the microwave oven, there is a slight possibility that radiation might leak out. The farther you are from it, the better.
- **Television radiation:** Be careful of your viewing distance. Sitting too close to the TV is not only bad for the eyes but it also increases the radiation levels absorbed by the body.



Smart @ Office

It's a fact—implementing best practice usage methods coupled with hidden settings in various office equipment, can save plenty of time and money in your workplace. Say goodbye to expensive running costs and learn how you can do your bit for your company's IT infrastructure



All will agree, the rules of business are relatively straightforward—earn as much as possible while keeping operating costs at a minimal. The more products you sell and the more clients you take on board, the greater are your earnings (and the higher the top lines) and the more efficiently the business is run, the lower is the spend at the operational level (and the lower the bottom lines). It does not matter how big or small your business is—at the end of the day, everyone wants to earn as much as they can and run it as efficiently as possible. However, in the course of daily work, we tend to use office systems right out of the box, not aware of the untapped potential of efficient operation that lies within each of them. With an understanding of their capabilities and options, there are plenty of gains to be extracted from each of your office systems. In the long run, you wind up using them more efficiently while getting more work done at the same (or lower) cost. As much as it is the job of the business owner or the IT administrator, the power to transform any workplace into a high performance workplace lies completely in the hands of its employees. In the face of the daily grind,

one tends to neglect the underlying operational costs: by unconsciously taking office infrastructure like power, printers, stationary, consumables, application software and Internet connectivity for granted, it eats into overall business revenues!

Over the course of the past month, we conducted a study at our office and discovered that there's plenty to be saved by paying heed to these operational areas and by adopting best practices that help utilize office infrastructure as efficiently as possible. Be it programs that help monitor and fine tune your Internet usage, to free (or cheaper) software alternatives to standard office applications, to printer settings that lower your ink and paper usage drastically, there are numerous areas where you can unlock that extra ounce of efficiency around your office floor.

Over time, when you become accustomed to working smart with your office equipment, you will begin to experience how much is saved as a result of these time and money saving tricks. And there's nothing to stop you from using these tricks in your SOHO or small office setup as well. After all, money saved is money earned.



Maximizing Hardware Efficiency

Office tools

Almost every aspect of our office work involves our desktop computer or laptop along with the office laser or inkjet printer. Let's take a look at the possibilities that exist for extracting more efficiency out of your office equipment.

Printing

The office printer is a shared resource that facilitates a large part of our daily work. From inter and intra office memos to proposals to letters to project reports and presentations, document printing is a core function in any workplace. When it comes to printing, there are clearly two costs associated—paper costs and cartridge (consumable) costs. Let's step though how both these cost centers can be trimmed down and result in savings.

We generally don't need ultra-high quality prints all of the time—things like office memos, meeting minutes and rough prints are completely usable even when printed at lower quality settings. The only time high quality is required is when printing critical documents like images or official files. Therefore, if you configure your printer's default print settings to run in an economy mode, all your prints will use the mode unless you explicitly change it for a singular instance where print quality is critical.

CHIP TIP All new printers feature a mode call "Ink save" or "Toner save" (in the case of inkjets and laser printers respectively). By enabling this mode, your consumables are used far more efficiently resulting in you having to replace them less frequently and therefore, lower consumable costs. Check your printer's properties and look for

a setting like "EconoMode" or "Ink save" mode. By enabling this mode, you stand to utilize about 40 percent lesser ink or toner! Study your printer's user manual or view the help files from the printer's preferences for an explanation of this mode for your particular printer.

CHIP TIP

Another easy tip: utilize printer papers that have been used on one side only. Over time, your office will have plenty of printouts that are not being used, but which still have one side blank. By using these papers for rough prints (make sure you insert them to print on the blank side!), you are automatically reducing your paper usage by half. To do this, you will need to use the Manual sheet feed mode on your printer. You should be able to find this in the 'Paper source' setting on your printer. Using this mode, the printer will not pick up a fresh sheet from one of its sheet feed trays, but will instead wait for a sheet to be inserted into its manual sheet feed tray. You should find this tray highlighted in your printer preferences in the Printer properties box. Before inserting used printer paper, check to see that the papers are free from creases and are without staples attached to them as this can cause paper jams and affect the printer adversely.

CHIP TIP

The next step is configuring your printer to utilize more page area while printing. At default settings, office applications like Microsoft Word and Excel tend to leave too much of a margin around your printed area on the sheet. By configuring the program to leave a lesser margin, you will be able to print more matter on your pages, resulting in lesser

paper usage in the long run. In the case of Microsoft Word, for example, after creating your document, click on "File | Page Setup". In the "Margins" tab, change the values of all margins of the top, bottom, left and right margins to "0.75" and the gutter to "0". With all the margins smaller, you will be able to fit more matter on the page and will eventually use lesser paper (especially with long documents).

CHIP TIP Instead of printing one page per sheet, there's a way you can squeeze two or more pages of your document per sheet. This is done by selecting this option in your printer's preferences. The text size from fitting two documents into a single page will be smaller, so verify that you can read it comfortably before using this mode on a sustained basis. By using this mode, you can fit four pages of your document into a single sheet (two per side)—that's saving 75 percent in paper costs using just this step!

By using all of these modes together, we noted a considerable saving of approximately 63 percent in printer cartridge and paper costs over sustained periods. Your mileage may vary, depending upon the types of printouts you take—you will notice more savings if your average document size runs into more than five pages and if they contain images and other graphics.

Power saving

When it comes to office IT running costs, electricity is one of the most significant. Besides the basic rules of being mindful of electricity usage by shutting off systems when not in use, today's office equipment is armed with systems that enable significantly lower power usage while maintaining high productivity.

CHIP TIP It is not feasible to shut down a computer or laptop each time it is not used. Therefore, all new systems feature some form of power savings embedded into their operating systems and core hardware. Virtually every component in your desktop or laptop is now capable of power management where it features several "power profiles" that switch it from a high-power condition to low

power, under special conditions. To make sure that you can use these features, ensure that your computer is ACPI (Advanced Configuration and Power Interface) compliant—if you've bought a computer within the past two years, chances are it will be. From all your system components, the motherboard, monitor, graphics card and hard disk drive most need to support ACPI. ACPI enables your computer or laptop to operate in a mode that consumes lesser electricity and it also allows it to jump out of that mode and return to normal operation quickly. This lets users conserve power while maintaining workflow at office. With CRT and TFT monitors, power saving can shut off their output, thus consuming lesser electricity. Hard disk can spin themselves down to a low power state without switching off when in low power state.

CHIP TIP There exists plenty of confusion about the exact function and capability of power saving, so let's first demystify these power saving modes. The two modes available for power management today are Standby and Hibernate. In the first, the system's component devices switch to a low power state while keeping the rest of the computer or laptop on. Here, applications and files are left in the state they are when you were last using them. For switching the computer back to its normal state, the user simply needs to hit a key or move the mouse and it reverts to its normal state in a few seconds. This mode is ideally used if you want to step away from your system for a few minutes at a time (for taking a coffee break or answering a phone call) but is not useful for long stretches of inactivity as it still consumes power, albeit lesser than if it were left completely on.

CHIP TIP When the computer is put into Hibernate mode, it saves a snapshot of the computer's memory (RAM) onto a special file on the hard disk and then shuts the computer almost completely off. When the computer is restarted, the contents of this file are simply transferred back to memory, returning the computer to its exact previous state—even with

all running applications on the desktop. While this mode uses far lesser power compared to Standby, the time taken to resume is much quicker than a normal Windows bootup. The Hibernate mode is suited to long periods of inactivity and can be used in desktops or laptops as an alternative to shutting off the computer at the end of the day or even when you're away for a couple of days.

To use the power management features, they will first need to be enabled in your system's BIOS (accessed by hitting DEL during startup). Search for an entry called "Enable power control by ACPI" under "Power Management" and enable it. After Windows XP boots up, go to the Power Options in the Control Panel. Under "Power Schemes", you will see a list of boxes that let you turn off your monitor and hard disk after a given interval of time. You can also direct the system to go to Standby or Hibernate mode after a specified period of inactivity. All of these power settings can be grouped into "Power Profiles" for easier usage.

Make sure the "Enable Hibernation" setting is checked in the "Hibernate" tab or you won't be able to use the Hibernate mode on your computer. To send your computer or laptop into hibernation, click on "Start | Turn off" and hold the "SHIFT" key. You'll notice the "Standby" button toggles to "Hibernate". Click on that button and your computer proceeds to hibernate. Make sure there is sufficient free space on your computer's hard disk to store the contents of your RAM during the hibernate function. To switch your computer on, simply hit the power button and you'll notice it starts up much quicker compared to a normal boot. And you can get to work that much faster as your applications and desktop will be exactly the way you left it, with all of your programs and files also the same way you left them!

Studies have shown that enabling power management can result in savings up to Rs 1,200 per year per computer: when implemented across your workplace, this translates into very significant savings in office electricity bills in the long run.



Tweaking Software Usage

Installing software on a single machine is not much of a problem but when the requirement increases to that of a small office, things can get a bit hairy. For one, installing a single application across different machines requires the purchase of multiple licenses. Purchasing essential licenses like Windows cannot be avoided (unless you have taken the step towards a desktop Linux distribution). Such expenses are mandatory. But there are ways you can exercise control over the money spent on applications in your office. These alternatives might be free or cheaper than popular software available on the Internet. The motive is to keep your expenses to the minimum without hampering productivity. Let's see how this can be done on the applications front.

Productivity

This is the most essential set of applications required in any office. Clearly, the most popular choice in this category is Microsoft Office. There is no doubt about the features offered by this powerful suite. However, if you are working on a tight budget then this is the first place you can make a huge saving by opting for cheaper alternatives.

CHIP TIP OpenOffice.org is a great alternative for those who need simple word processing, spreadsheets or creating professional presentations. OpenOffice.org's file format is based on an open, universally accepted format (XML) and is also being followed by other well-known office suite developers. It offers compatibility with Microsoft Word, Excel, PowerPoint files in addition to its OpenDocument format. OpenOffice.org's

spreadsheet program, Calc, also supports macros created in Microsoft Excel. This office suite also provides free solutions for those who need to create a lot of flow charts. If all your machines do not need all these programs, you also have the option of running a custom install to save space. Another alternative for a simple word processing program is AbiSource's AbiWord.

E-Mail clients

E-mail can be accessed either through the web browser (webmail) or via an e-mail client. A popular e-mail client used widely today is Outlook Express 6. This works pretty well with users who are already accustomed to it. Spam filtering, however, is not one of Outlook Express's strong points, so you might wind up with plenty of junk mail. You will need to install third-party spam filters to weed out all those mail filled with advertisements, porn, malicious code or fake links (the cause of phishing attacks). Use filters that work with Outlook Express as "plug-ins"—they do a fair job of eliminating junk mails.

CHIP TIP Employees spend a sizeable amount of time clearing out junk mail (see statistics). If you haven't been to work in a while, you will most definitely have a bloated inbox waiting for you. In this case, you should also try and set your web account with filters that will dump the e-mails into the Junk folder before you even begin downloading it into Outlook Express. Filters like "eXpurgate" and "SpamPal" can be used with Outlook Express and work pretty well. If you intend to use a single computer to download and distribute mail to the rest of the machines in the office,

you can consider Eudora's WorldMail 4.0 server solution. The pricing is based upon the number of users you intend the mail server to distribute to. The cost is reasonable and also provides anti-spam and/or anti-virus capabilities. This can also be teamed up with a free e-mail client like Eudora mail client. Thunderbird and Opera Mail are two other options—try them out and see which fits your needs best. Thunderbird boasts of a better spam filter and is also more stable. If you want to switch over from OE or MS Outlook, it will let you do that too. Opera Mail offers a very basic feature set and is ideal if you need the e-mail client to be integrated with your web browser.

Web browsers

There are a number of browsers available today that one can use to surf the Web—most of you will have worked with at least two kinds of browsers. What distinguishes one from the other is primarily the security and number of features. Price is never an issue as they're all free.

CHIP TIP The newest version of Internet Explorer (IE 7 Beta 3) is available with tabbed browsing, anti-phishing and pop-up filters. Those who do not want to download beta software can stick to Maxthon, which offers a tabbed browser interface and runs atop the IE engine. Opera 9 and Firefox 1.5 are two other options you can use—both offer very good functionalities as far as tabbed browsing and security are concerned. Even though Firefox had recently come under some criticism, it is still quite popular giving Opera a tough fight. Numerous extensions (plug-ins) are available for Firefox to simplify and enhance your surfing.

One drawback of Opera is its inability to load ActiveX scripts on a web page—whenever you have to visit such sites you will need to resort to IE.

Anti-virus and anti-spyware

The most important aspect of your workplace (apart from the employees, of course) is data. Especially in this day and age, it needs to be protected at all times. Since computers in an office are usually

inter-networked, there is an inherent possibility of a virus attack, and this could quickly spread to other computers and throw a spanner in your workflow. Computers that have not been updated regularly are more likely to be the cause of data loss and/or network connectivity, as they open loopholes for threats to enter.

CHIP TIP Apart from the well known programs like McAfee and Norton, you can also opt for GriSoft's AVG Antivirus which is available for desktop users as well for small businesses. It features protection levels ranging from mail servers to file servers. Another option is Avast's Home Edition which is available for desktop users for free (including program and virus definition updates); however, you have to pay for commercial applications. This is one place you can safely shell out money for a subscription of licenses—in fact, your data protection policies should necessarily be factored into your capital costs while planning and setting up and office.

CHIP TIP At the desktop level, you should ensure that each machine has its shields up against spyware/malware. There are a number of anti-spyware programs available such as Spybot-Search & Destroy and Ad-Aware which are two popular malware busters. They can weed out browser hijackers (IE BHO exploits) and annoying advert pop-ups from your surfing experience.

Backup

With mission critical data such as business plans, financial predictions, proposals, tenders or financial records, you can never be too cautious with its safety. This is an area where compromises are not allowed. An office can appoint a set of individuals to maintain a backup of all critical data on recordable CD, DVD or even tape backup every week or month depending on the requirements.

CHIP TIP If you need to schedule automated backups across the network, you can use Windows Backup tool. Ideally suited for small office applications, this tool is installed by default in Windows XP

(2000/2003) and is quite handy if you do not intend to invest in serious data backup and recovery software. You can also make use of programs like SyncBack that will help you synchronize your employee's data across the networks for archival purposes.

Data Recovery

Nothing hurts more than losing data! But fear not—using tools, this is invariably a reversible condition. There are several applications for recovering data loss due to software-related causes (accidental erasure, virus attacks, rogue program crashes, hard disk corruption etc). But most importantly, prevention is better than cure.

CHIP TIP If you need to set up a system from scratch again, it is best to use programs that can create an image of a freshly installed hard drive and store it on a networked device so that it can be easily pulled down and used subsequently. This will save you the time taken to reinstall the operating system and applications, transferring user-specific data and settings all over again.

Windows XP/2000/2003 provides the Automated System Recovery as a nifty method of getting back on track as quickly as possible. ASR is part of its backup feature set. A more robust application is Norton Ghost—even though it comes at a cost, it is a reliable disk image-creating program that will have you up and running without reinstalling the operating system again.

Desktop Search

Being conscious of expenses in your business is essential. But keep in mind that time is also of importance. Looking for critical files and folders that have been saved haphazardly requires a real-time indexing tool.

CHIP TIP Google's Desktop Search and Avant Find are two recommended applications that will reduce the time you spend on looking for your data by producing blazing fast results even as you type in the search field. Over extended periods of usage, this translates into serious time savings.



Optimizing the Network

Having your computers networked is the de facto standard for all businesses in this information age, as they facilitate easy sharing of data and also makes the Internet medium a cheap and effective mode of communication. Within an office, factoring in the purchase switches and cables is as important as buying the computer hardware itself. Here are a couple of tips of how an organization could make effective use of their network infrastructure.

Network Setup

A network hardware and services are the most basic elements for all businesses.

CHIP TIP Get a Public IP only if it is absolutely required. If you do have a Public IP address, hide your network behind a NAT (a system that translates your local IP address to Internet addresses). Most if not all applications are capable of traversing NAT. Some ISPs provide a Public IP address by default while others provide it at an extra cost. A public IP address makes your system more vulnerable to Internet threats—attacks by the Blaster, Sasser and Welchia worms thereby increasing the chances of exploitation. The Sasser worm, for example, caused a damage of something between US\$14.8 billion and US\$18.1 billion to infrastructure and networks globally (as quoted by Thinkquest.org).

CHIP TIP Choosing the right provider is of primary importance because this is the factor that will decide the availability of your business. DSL (Digital Subscriber Line) as a technology is more reliable than cable since there is only a single point of failure.

Cable technology while being widespread is more prone to glitches like loss of electricity at a hub point or a damaged cable.

Bandwidth

Having set up your Internet connection, it is equally important to manage it properly for the smooth running of your business.

CHIP TIP Choosing the right bandwidth is another step; this is where most businesses fall short. The general rule of thumb is—the higher is better. While this is true in general, knowing how much bandwidth is required will help you save money on bandwidth as well as increase productivity. For example, it took an average of 37 seconds to open our web site [www\(chip-india.com](http://www(chip-india.com)) during the peak work hours while it takes an average of about 6 seconds for the same page to open under less network loads. This leads to a total of 30 seconds per page; if you frequent your favorite sites, you would see a six-fold increase in your productivity. Double the bandwidth leads to half the page during load times. We recommend a bandwidth of at least 128 Kbps for a small network of 10 PC users and exponentially increase the bandwidth with the increase in the number of users. We recommend a 512 Kbps line for a 50-user network assuming minimum data/application downloads.

CHIP TIP Considering the fact that even basic applications like browsers are capable of hogging up all the available bandwidth in an active download, it is essential to manage the bandwidth that is available. A simple browser download can cause



disastrous effects on productivity and in some cases, system availability. Downloading all pre-requisite basic applications so that they can be shared to all employees is a simple way of managing bandwidth so that they need not be downloaded repeatedly. Similarly, freely available software like Software Update Services can be used to mass deploy OS updates and patches. This reduces the network bandwidth use substantially. Imagine a security vulnerability being published and Microsoft issuing a patch and all the systems downloading the patch at the same time. Worse, imagine a mass deployment of Windows-based client systems when they need the updates and patches—the bandwidth used would be huge. Also, when downloading applications, use a download manager as they feature the ability to resume downloads in the event of Internet congestion or failure. These programs also feature bandwidth-limiting. One such download manager is Download Express—it works well with Internet Explorer as well as Mozilla Firefox. You could also use throttling bandwidth like that of Net Limiter.

Firewalls

Having setup your Internet connection, it is important to concentrate on its security.

CHIP TIP You can also cap user bandwidth on the server side using free software like CBQ. Server side bandwidth restrictions are extremely helpful in limiting the damage that can be done by bandwidth hogging applications. Some managed switches provide port level, hardware-based bandwidth restrictions. About 45 percent of the executable files downloaded through Kazaa contain malicious code. Also, peer-to-peer applications are responsible for 80 percent of pirated software. The use of pirated software can have serious legal as well as security ramifications. Hundreds of companies in India still use a pirated version of Microsoft Windows. This prevents users from receiving critical security updates released by Microsoft, resulting in security breaches. Almost 100

percent of all the popular worms that have already created havoc had a security patch available—many of them before they even reached mass deployment.

CHIP TIP Firewall software can also be used to block IPs and ports that choke bandwidth. For example, there are several viruses and worms that send random data to launch denial of service attacks; a classic example of this is the Blaster and the Welchia worms that used up so much network bandwidth that they led to the loss of millions in businesses. Amongst high bandwidth utilizing programs, peer-to-peer file sharing protocols are the most notorious.

Application layer proxies

Exercise control on the data that flows in and out of your network by effective using proxies.

CHIP TIP In the last year, 80 percent of companies reported that employees had abused Internet privileges by downloading objectionable or pirated software. Application layer proxies like Squid provide good control over what Web pages can be accessed by a user. Squid can be used to limit a user's Web access to selective web sites and URLs only. This can be particularly useful when an employee has specific operations to perform like Web-based data entry, or accounts, besides which they can only access the company Intranet and Web-based e-mail. These software also allow Web restrictions that can prevent access to certain defined web sites.

CHIP TIP One can also implement time-based limitations on what sites and services can be accessed. For example, you can configure some of the gateway devices to stop Internet access after office hours.

CHIP TIP Application layer proxies can also be used to block programs like Instant messaging programs or P2P clients. Nearly 90 percent of instant messaging is done over public messaging services like Yahoo, AOL or MSN Messenger, exposing companies to security risks. instant messaging programs are also

used for personal chat, leading to lower productivity.

VoIP

The Internet can be used as a great medium to call up clients in different countries at minimal rates.

CHIP TIP VoIP is a technology that is gaining popularity due to its low cost and increasing use of broadband. The advantages of using VoIP are quite apparent—they use the existing infrastructure, an Internet line, speakers and a microphone that come standard with most personal computers today. Many of the VoIP providers like Skype, etc work through NATs and proxies and can be used seamlessly with your existing network. Besides, VoIP has obvious cost benefits: for example, if you want to make a call to the US, it would cost you Rs 6 per minute at the minimum using traditional phone networks. By using a VoIP service like www.anyuserindia.com, you can make phone calls to the US for as little as Rs 1.15 per minute—that's five times lesser! Plus, you can even use this service while roaming nationally or globally. The Internet can also be used for group messaging and video conferencing, thus saving on travel costs.

Wireless Networks

The use of laptops is leading to an increasing need for wireless networks.

CHIP TIP Wireless networks, though not largely prevalent, are slowly seeping in as the use of laptops and other wireless capable portable devices increases. Many organizations, who already have a wireless infrastructure, complain about unreliable connectivity and poor range performance. The first thing that one can do to gain on the range is to position the device at an elevation—this creates a larger wireless network blanket. Secondly, one can use directional antennae to increase the range as this focuses the wireless network within a specific area, resulting in stronger signals in that zone while also preventing the Wi-Fi network from seeping outside office boundaries. ■

| Marco D'Souza, Ashutosh Desai and Kunal Rupera

✉ Jagdish Limbachiya



Top Gear

This time around we have an interesting mix of products catering to all our readers. We start off with the Lenovo 3000 N100 Notebook. Lenovo notebooks generally come at a heavy price tag but this one doesn't and still maintains Lenovo's quality and reliability. It's a strong contender for value-for-money mobile computing. For hardcore enthusiasts, we have the Antec P150 case; with sound dampening materials and an elastic rubber suspension for hard drives, you will witness a totally new dimension to computer cases.

For gamers on a budget, the Forsa 7600GS graphics card is a good performer and gives you the best bang for buck.

| The Ratings Explained

The products in the individual and comparison tests share exactly the same test procedures.

Each product in Top Gear is rated on a scale of 5 for different key parameters: Performance, Build Quality, Features, Ergonomics and Warranty. These vary according to the characteristics of the hardware. For instance, ergonomics (ease of use) is not important in a graphics card and therefore, it will not be evaluated for this.

A product's Overall Rating is calculated by assigning weightages to each evaluation

Keeping pace with the latest technology, ASRock has introduced its AM2-based motherboard—the ASRock AM2V890-VSTA. It is based on VIA's K8T890 chipset and surpasses AM2-based motherboards from Asus and Gigabyte with Nvidia's nForce5 series chipsets. This will bring back VIA into contention after it lost out to Nvidia's nForce4 series chipsets.

Panasonic's PT-P1SDEA ultra lightweight projector with a high luminosity level is tailor-made for office use. In portable devices, we have Samsung's YP-D1 MP3 player that gives Apple's Nano a run for its money, and a visiting card scanner from Plustek. For more, read on...

parameter—the more important a parameter, the higher is the weightage allotted to it.

In addition, there is a Value for Money rating, which is calculated from the performance and the features of the product in relation to the price. High performance and lots of features at a low price translates into a better Value for Money rating. This rating is calculated using current prices.

Note: The prices mentioned here do not include taxes. Hence, they will vary according to the taxes applicable in the city or state where you buy the product from.



Notebook

Lenovo 3000 N100

Specifications: Dimensions (WxHxD mm): 360 x 38.1 x 267, Weight: 2.76 kgs, 14.1-inch widescreen display, Intel 945GM chipset, Intel Core Duo 1.83 GHz, 512 MB DDR2 RAM, 80 GB hard drive, DVD-RW drive, Microsoft XP Home Edition

Price	Rs 58,700
Contact	Rahul Agarwal
Phone	80 2206 3000
E-mail	pc@in.lenovo.com
Website	http://www.lenovo.com/in/en/
Warranty	1 year

RATINGS					
Build quality	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Ergonomics	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Performance	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Features	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Overall Rating	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Value for money	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Eco-book

Usually, most of the Thinkpads we have reviewed at our Test Center have been a little heavy on the pricing. So when we got our hands on the Lenovo 3000 N100, we were surprised to see the configuration commensurate with the price tag. The economical pricing did not mean a drop in quality either. The notebook's exterior is made up of plastic instead of magnesium alloy but Lenovo retains the sturdiness and solid feel. It is quite heavy; weighs a little less than 3 kilograms and comes with all the features that one would like to have in a notebook.

Features

The N100 uses Intel's 945GM chipset and is powered by Intel's Core Duo processor (1.83 GHz). This 14-inch widescreen notebook's

graphics and audio subsystem are integrated. The notebook comes with Wi-Fi built into it as well. Most of the essential ports on the notebook are cleverly arranged on the sides. Only the power, phone jack and S-Video (out) ports are on the rear panel. There are four USB ports, a VGA-out connector, one PCMCIA slot, Ethernet and a 4-pin FireWire connector. It also has a built-in media card reader. The keyboard does not have IBM's trademark pointing stub anymore. The notebook has labeled its ports along the keyboard's periphery so that you don't need to search for the headphone jack.

Performance

Benchmarks like PCMark 2005, 3DMark 2003, SiSoft Sandra, Mobile Mark and

AutoGK for encoding VOB files (DVD files) were used to test the Lenovo 3000 N100 for its performance. The 3DMark score is reasonable as the notebook relies on an integrated graphics subsystem. It took only 30 seconds to encode a 24 MB video file to XviD with default settings. The scores obtained from real-world and synthetic benchmarks are shown below.

For: Good build quality; good quality display; pre-installed with IBM Rescue and Recovery to restore system, which can be initialized before Windows boots.

Against: The web cam is fixed and does not swivel. A manual switch enables Wi-Fi and Bluetooth simultaneously.

Test Scores

SiSoft Sandra 2007

CPU Arithmetic

Dhrystone (MIPS)	:	12455
Whetstone (MFLOPS)	:	9195
HDD Seq. Read/Write	:	32 MB/s
HDD (Index)	:	29 MB/s
Memory Bandwidth	:	3223 MB/s

PCMark 2005 : 2870

3DMark 2003 : 1332

Video Encoding (24MB) : 800 KB/s

Battery Life (Mobile Mark 2002) : 3 hours and 45 minutes.



The Lenovo keyboard doesn't have the trademark IBM pointing stub



All the essential ports on the notebook are placed on its sides

Computer Case

Antec P150

Specifications: Dimensions (WxHxD mm): 8.1x17.5x18.5, Standard ATX, Optional HDD suspension system, Poly carbonate side panels, Front USB/FireWire Ports, 430W- NeoHE 430 SMPS, ATX12V 2.2 connector

Price	Rs 11,300
Contact	www.theitdepot.com
Phone	044-4215922
E-mail	info@theitdepot.com
Website	www.antec.com
Warranty	3 years
RATINGS	
Build quality	■■■■■
Ergonomics	■■■■■
Performance	■■■■■
Features	■■■■■
Overall Rating	■■■■■
Value for money	■■■■■



Silent white monster

The Antec P150 cabinet can be best described as quietly elegant. It looks classy because of its sleek glossy white and brushed aluminum finish and its uncluttered design theme supported by concealed drive bay doors with a seemingly grill-less front bezel. The high-performance and high-efficiency power supply unit make the case environmentally friendly.

Features

Barring the front bezel, the case is made of steel. One of the new features included in the P150 is a 0.9 mm semi-hard vinyl sheet, attached to both the side doors and the roof of the case. It is meant not only to dampen panel vibrations but also to block noise.

The P150 comes with a left side panel of spring-loaded thumbscrews that are permanently attached to the panel. Cable management has been aptly taken care of by Antec; a set of plastic hooks wrap up the clutter of cables that usually cause a mess inside the case. A 3-speed Antec Tri-cool fan is mounted directly on the rear panel. The best part is that the fan comes with three variable speeds for power management and also to reduce the vibration in the case.

A close look at the front bezel reveals a lot of new features. The entire front bezel is actually a door that opens from left to right and swings on two robust steel hinges. Behind the bezel, you'll notice the fan intake filter; two 92 mm fans (instead of the normal 120 mm fan) have been used to provide a wide area for cooling. The fans are strategically placed in a way that the upper fan cools the hard

drive while the lower one cools the VGA/PCI cards.

The front fan mounting plate is also a swinging door similar to the front bezel. This plate performs the dual role of mounting the fans while also acting as an access port for installing the hard drives. Antec has come up with the novel idea of installing/removing the drives from the front of the case and provide better airflow. Another new feature is the introduction of the rubber elastic suspension hard drive setup. The elastic suspension has simplified the mounting of the hard drive; just slide in your hard drive between the two rubber strings at the front and the back. The elastic suspension completely eliminates the vibration caused by the hard drive.

The 430W Neo HE power supply unit is mounted on the rear wall. It is cooled by a single 80 mm fan and hardly releases any noise. The detachable output power cords are useful because you can use the ones that you need and remove the ones not required, thereby reducing case clutter.

For: Sleek finish; simple hard drive mounting; provisions for cable management and good power supply unit.

Against: Expensive.



The front bezel and the fan panel open to reveal the drive bays



Add-on TV cum FM

If you want to convert your PC into a complete entertainment hub, here's a hot addition. The Pinnacle PCTV 50i is an internal TV tuner, which can extend the versatility of your PC by adding the functionalities of a television set as well as an FM radio.

To install the card, you need to open your case and fit the card into any unoccupied PCI slot on the motherboard. However, if you haven't opened up your case yet, you can look up the installation manual or call the PC technician for assistance. After fitting the card, the audio output of the card has to be connected to the "aux-in" or "line-in" header of your soundcard or motherboard with the bundled audio cable. This job could have been easier if the rear panel

of the card had featured a line-out jack in addition to the RF (cable TV), FM antenna, IR receiver and S-video connectors. After making the required connections and installing the drivers and applications, you need to tune the TV and radio channels. The Pinnacle Media Center Settings utility makes this task a breeze. You can even configure other parameters like video capture format, time-shift, display settings and so on.

To watch TV or listen to the radio, launch the Pinnacle TV Center and use the IR remote control to surf through your favorite channels. You can even record your favorite TV programs to MPEG-1 or DivX formats, and radio to MP3 or WAV. And if you own a gaming console, you can use your monitor instead of a television,



FM antenna, IR Remote, IR Receiver, S-video to composite adapter



The rear panel sports FM, RF (cable) jacks and S-video input but no line-out

TV Tuner

Pinnacle PCTV 50i

Specifications: Interface: PCI, Tuner: PAL/SECAM/NTSC, Audio: Stereo, Video input: S-Video and composite (via included adapter), FM Radio, IR Remote control, Real-time MPEG-1 capture

Price	Rs 2,990
Contact	Pinnacle Systems
Phone	011-41608211
E-mail	adey.extern@pinnaclesys.com
Website	pinnaclesys.co.in
Warranty	1 year
RATINGS	
Performance	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
Features	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
Overall Rating	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
Value for money	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>

thanks to the video input feature.

The PCTV 50i performs flawlessly. The picture quality and FM reception are excellent. Even the PlayStation 2 experience on the monitor was satisfactory. If you want a good TV-tuner card, we strongly recommend this one. Get it and you will be more than satisfied!

For: Easy to install; excellent user interface and very good performance. It works with Windows XP Media Center Edition.

Against: A line-out connector would have been more preferable.



PlayStation 2 experience on the Pinnacle PCTV 50i

Projector**Panasonic PT-P1SDEA**

Specifications: Native resolution: 800x600, Technology: LCD, Brightness: 1500 lumens, Video inputs: 15-pin D-Sub (VGA), Composite, S-Video.

Price	Rs 73,999
Contact	Panasonic Asia Pacific Pvt Ltd
Phone	022-40032300
E-mail	s.yederi@npi.panasonic.co.in
Website	nationalpanasonicindia.com
Warranty	2 years
RATINGS	
Build quality	█ █ █ █ █
Ergonomics	█ █ █ █ █
Performance	█ █ █ █ █
Features	█ █ █ █ █
Overall Rating	█ █ █ █ █
Value for money	█ █ █ █ █



Quick, easy and portable

For most first-time users, a projector can be rather daunting to set up and use. With the Panasonic PT-P1SDEA, this is something you needn't worry about—everything about this projector spells simplicity and ease of use.

Features

Coming in at just 1.3 kilos, it is about a span wide and deep and about as high as your index finger, making it highly portable. The package consists of a VGA and power cable, a card-sized remote and a nifty carry bag. This projector is based upon LCD technology (as opposed to DLP technology as used by some brands), features a native resolution of 800x600 and a rated luminosity of 1500 lumens. These specifications make the projector suited to data applications (presentations and text-based displays) as its high brightness levels enable it to even be used in a room with ambient lighting. The unit features the menu control panel on the top rear surface with the focusing and zoom rings immediately behind the lens on the front. With the projector having its cooling fan blowing out the rear of the device, it prevents any distortion in the image due to heat refraction as seen in other projectors that have the cooling fans positioned

toward the front. The projector also innovatively features an SD card reader that enables it to directly read images from such cards—ideal for displaying digital photos from your camera. A small, integrated speaker makes it suitable for use in small-group presentations. For video inputs, the projector only has VGA, S-Video and composite video sockets. In the absence of connectors such as DVI and component input, this projector isn't the best choice for serious home theater applications, though it displayed standard video reasonably well as we witnessed in our DivX and DVD video tests. Even though it can display a variety of HDTV signals, its relatively low native display resolution makes it unsuited to serious high-definition home theater applications. The automatic keystone adjustment adjusts the image dimensions for a perfectly rectangular display, no matter what the inclination of the projector. To aid the process of leveling, the rear left leg consists of a thumbscrew that changes the tilt of the device, along with a retractable leg on the front that changes the vertical positioning. The on-screen menu is easy to navigate and offers control over brightness, contrast, manual keystone adjustment, VGA clock (for reducing the

occurrence of stray image noise), hue and tint, among several others. All of these functions can be controlled from the remote, which we found to be very sensitive—it worked even when it wasn't pointed directly at the device.

Performance

The device exhibited good response in data applications involving presentations and text-heavy display. It has sharp optics and the relatively high brightness enabled it to be used comfortably in lit rooms. However, its high lumen rating worked against it while watching video as the black levels were very poor—they appeared a dull grey instead of solid black. Unfortunately, we could not assuage this effect even with the integrated controls. This was compounded by the noticeable “light spray” around the display area—especially in a completely dark room. However, the video colors were vivid and defined with good saturation across the spectrum. Also, there was no visible persistence in the display, even with fast-moving video sequences.

For: Highly portable form factor; integrated SD slot; easy setup with automatic keystone adjustment.

Against: Limited video inputs; unsuited to high-definition video; poor black levels.



Graphics Card

Forsa 7600GS

Specifications: Interface: PCI Express x16, 400/800 MHz (Core/Memory), 256 MB GDDR2, 128-bit Memory Interface, 12 pixel pipelines, Ports: D-Sub, DVI, HDTV, S-Video

Price	Rs 6,700
Contact	Shree Sagarmatha Dist Pvt Ltd
Phone	011-26428541/42
E-mail	contact@techcomindia.com
Website	www.techcomindia.com
Warranty	3 years
RATINGS	
Build quality	█ █ █ █ █ █
Performance	█ █ █ █ █
Features	█ █ █ █ █
Overall Rating	█ █ █ █ █
Value for money	█ █ █ █ █

Value for money card

Taking into account all the graphic cards we have reviewed, the Forsa 7600GS has excellent temperatures but poor clocking speeds; its default clock speeds are 400/800 MHz (Core/Memory). It has the same G73 core used in Nvidia's 7600GT but uses GDDR2 memory instead of GDDR3 in the 7600GT. Hence, it has lower memory speed of 800 MHz. Additionally, Nvidia has provided Pure Video support for the 7600GS series and the new drivers have added support for high-definition H.264 hardware decoding. This is an advantage if you intend to use this card for an HTPC (Home Theater PC) setup. The card competes with the 6600GT but it has 12 pixel pipes as compared to eight of the 6600GT.

Accessories and cooler

Accessories include a driver CD, S-Video



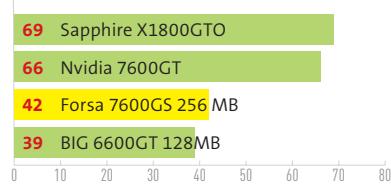
Efficient copper cooler

Cable and the user manual. Even though the card has HDTV-out, no cable is provided. No DVI-to-D sub-adapter is provided either. However, the card features both the ports. An active copper cooler is also part of the package. It is exactly the same as the one that came with BIG's 6600GT (reviewed a few months ago) minus the LED. However, its performance is to reckon with. The stock

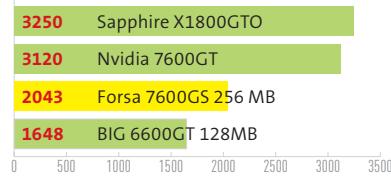
Quake4- 1280x1024 (No AA & No AF)



Quake-4 1024x768 (4xAA & 8xAF)



3DMark 2006



temperatures were 45 degrees and even under load it didn't exceed 53 degrees.

Performance

The card performs marginally better than the 6600GT, especially at higher resolutions with AA and AF on. This can be largely attributed to the four extra pixel pipes as against the 6600GT. We saw a huge difference in the 3DMark 2006 score as the benchmarks were carried out at a default resolution of 1280x1024.

Using the inbuilt overclocking utility "coolbits" in the control panel, we were able to push the clocks to 415/439 MHz (Core/Clock). This is poor and is definitely not meant for overclockers. However, we would like to say that at its price, it is the best product you can buy in this category, as it is at least 5 percent faster than the 6600GT, which is available for Rs 7,000 and above.

For: Very good value for money and excellent temperatures.

Against: Poor overclocker.

Test Rig

AMD Athlon X4400+
DFI nForce4 Infinity SLI
1 GB (512x2) Kingston HyperX (2-2-2-5)
Antec TP-II 550 Watts
WD740 Raptor 74 GB

Motherboard

ASRock AM2V890-VSTA

Specifications: Form factor: ATX, CPU Socket type: AMD Socket AM2, Chipset: Northbridge-VIA K8T890, Southbridge-VIA 8237A, FSB: 1000 MHz, Memory: DDRII-800 (max 8 GB), HD Audio: Realtek ALC888, SATA/PATA: 2/2, 10/100 Ethernet, 8 USB ports

Price	Rs 3,800
Contact	Abacus Peripherals
Phone	022-66923941
E-mail	ajain@abacuspiperipherals.com
Website	www.asrock.com
Warranty	2 years
RATINGS	
Build quality	█ █ █ █ █
Performance	█ █ █ █ █
Features	█ █ █ █ █
Overall Rating	█ █ █ █ █
Value for money	█ █ █ █ █



Competence thy name

ASRock known for offering budget motherboards has finally launched its very affordable AM2 board supporting AMD's latest generation of processors. Let us see what the AM2V890-VSTA board has to offer and how well it cruises through our benchmarks.

Features

As the name suggests, the Windows Vista ready ASRock AM2V890-VSTA board is based on the VIA K8T890 chipset coupled with the VIA 8237A Southbridge. Like most of the recent boards, the chipset sports an FSB of 1000 MHz. Despite being a budget board, it boasts DDRII memory support up to 8 GB, 7.1-channel high definition audio and a PCIE x16 slot for super-smooth performance.

Since the board is a budget board, you cannot expect what high-end boards normally offer such as multi-GPU, FireWire and SATA2 support. The board offers a tight but good enough feature set to build a powerful system. It also offers eight USB ports, three PCI slots, PCIE x4 and x1 slots, 10/100 Ethernet, 2 PATA and 2 SATA 1.5 Gb/s. The only drawback here is the lack of support for SATA 3.0 GB/s. The board also lacks support for RAID 0+1.

Design and layout

The board features a good layout except for one glitch—the DIMM slots are placed quite close to each other. Also, since the Northbridge features a passive cooling system, it heats up too much. The rear panel features PS/2, parallel and serial ports, four USB ports, discrete 7.1-channel audio jacks and a 10/100 RJ45 jack.

Performance

Performance wise, the board is at par with top-notch boards. It excelled in both synthetic and real-world tests that stressed all the subsystems ranging from the processor to the graphics. Despite being fitted with high-end components, the board cruised along with no signs of any bottlenecks. This proves that the VIA K8T890 chipset delivers rock-solid overall system performance.

If you want a powerful system within a strict budget, the ASRock AM2V890-VSTA deserves serious consideration as it offers terrific bang for the buck.

For: Excellent performance; good feature set and excellent value for money.

Against: Northbridge seriously requires active cooling; the board also lacks support for SATA 3 Gb/s.

Test Rig

Processor: AMD Athlon 64 FX-62
Memory: Corsair XMS2 8500
Hard drive: Western Digital Raptor 740GD
Graphics card: Palit 7600GT

Scores

Synthetic

PCMark 2005:

Overall: 6357
HDD XP Start Up (MB/s): 10.30
3D Pixel Shader (fps): 176.48
Multithreaded Test
Audio Compression (KB/s): 2751
Video Encoding (KB/s): 420.04

3DMark 2005: 6035

SiSoft Sandra 2007

Dhrystones (MIPS): 20475
Whetstones (MFLOPS): 17285
Memory bandwidth: 8110 MB/s

Everest Ultimate 2006

Sequential read (MB/s): 68
Sequential write (MB/s): 67.8

Real-world

Video encoding (KB/s) : 612

Gaming

Doom 3 640x480@med: 165 fps
Doom 3 1280x1024@high: 82 fps



Powerful power supply

The Zebronics ZEB 730 watts power supply unit comes staved off all the cables thereby reducing the clutter and imparting a neat look to the cabinet interior. It has a smart cable management design, which allows you to use the cables you require while also improving the internal airflow.

The power supply unit is designed in way that a blue light emits from the back, and shines in the dark. A unique feature is the tiny switch at the back that allows you to toggle switching the fan to save power as well as for silent usage.

Features

The ZEB 730 comes in with 20+4 pin main power connectors. The last 4 pins can be

slid off to make it a 20-pin connector for a 20-pin socket motherboard. The PSU also comes with ATX12V input 4-pin processor power connector and EPS12V input 8-pin processor power connector. The power supply supports SATA connectors. The ZEB 730 makes use of the EZ-Grip Molex connectors that are easy to remove and a 135 mm fan that is not only silent but also cools efficiently.

An innovative and neat feature is the stand-by audio function, allowing you to listen to music tracks directly from the CD/DVD drive without booting up the operating system. The smart thermal fan control function gives you 0dBA fanless status under 40 degrees and a maximum of 30dBA at full load. A PCI Express and SLI-ready power supply unit, it has connectivity support for high-end graphic cards.

Performance

The ZEB 730 performed very well and

Power Supply

Zebronics ZEB-730W

Specifications: 730 watts, Pre-sleeved cables, 20-24 pin ready, Detachable module connectors, PCI-express ready.

Price	Rs 6,700
Contact	Top Notch Infotronics (I) Pvt Ltd
Phone	044-26616201/02
E-mail	zebronics@zebronics.com
Website	www.zebronics.net
Warranty	3 years

RATINGS					
Build quality	Red	Red	Red	White	White
Ergonomics	Red	Red	Red	White	White
Performance	Red	Red	Red	Red	Yellow
Features	Red	Red	Red	Red	White
Overall Rating	Red	Red	Red	Yellow	White
Value for money	Red	Red	Red	Yellow	White

surpassed all other power supply units in its category. It has good stability even under loaded conditions. Ample cooling is provided inside the power supply with the help of good heat sinks and a 135 mm fan. We used the Rthdribl application to stress out the system completely. Keeping a fluctuation of 5 percent, we tested the unit with and without load and kept track of the voltages with a digital multimeter; the voltage barely budged a bit when put on load.

We also used Everest 2006 to check the voltage under loaded conditions as well as when the system was idle and here too, the 730 sailed smoothly.

The Zebronics ZEB 730 watts is a true server and gaming power supply unit with great performance and lots of features to make it easy to work with.

For: Power Efficient, Silent, stable under load conditions.

Against: None.

AC INPUT 50Hz/60Hz		Output Range		Active (Optional)
<input type="checkbox"/>	-R	<input type="checkbox"/>	-RA	
<input type="checkbox"/>	GM420PC12V	Voltage	+3.3V +5.0V +12V1 +12V2 -3V -12V +5Vsb +5V12vB	
<input type="checkbox"/>	GM440AC12V	Max. Load	30A 40A 144A 12A 1.0A 1.5A 2.5A 2.5/3.0A	
<input type="checkbox"/>	GM470SC12V (Audio Stand-by)	Min. Load	0.2A 0.2A 0.2A 0.2A 0.1A 0.1A 0.1A 0.2A	
<input type="checkbox"/>	GM520S12V	Total Out Power	200W 200W 200W 5.0W 18W 12.5W	50W
<input type="checkbox"/>	GM570S12V	Max Peak Power	450W to 530W	
<input type="checkbox"/>	GM520PC12V	Voltage	+3.3V +5.0V +12V1 +12V2 -3V -12V +5Vsb +5V12vB	
<input type="checkbox"/>	GM530A12V	Max. Load	35A 45A 18A 16A 1.0A 1.5A 2.5A 2.5/3.0A	
<input type="checkbox"/>	GM570SC12V (Audio Stand-by)	Min. Load	0.2A 0.2A 0.2A 0.2A 0.1A 0.1A 0.1A 0.2A	
<input type="checkbox"/>	GM570S12V	Total Out Power	225W 225W 225W 5.0W 18W 12.5W	50W
<input type="checkbox"/>	GM570S12V	Max Peak Power	560W to 630W	
<input type="checkbox"/>	GM620PC12V	Voltage	+3.3V +5.0V +12V1 +12V2 -3V -12V +5Vsb +5V12vB	
<input type="checkbox"/>	GM620AC12V	Max. Load	40A 50A 20A 20A 1.0A 1.5A 2.5A 2.5/3.0A	
<input type="checkbox"/>	GM670SC12V (Audio Stand-by)	Min. Load	0.2A 0.2A 0.2A 0.2A 0.1A 0.1A 0.1A 0.2A	
<input type="checkbox"/>	GM670S12V	Total Out Power	250W 350W 350W 5.0W 18W 12.5W	50W
<input type="checkbox"/>	GM670S12V	Max Peak Power	660W to 730W	

The power ratings of the 730 are way ahead of other power supplies

Digital Multimeter		Everest 2006	
	Idle	Load	Idle
+3.3v	3.40	3.39	3.30
+5v	5.07	5.06	5.97
+12v	11.99	11.95	11.58
			11.39

Thin Client

nComputing OfficeStation L110

Specifications: Dimensions (WxHxD mm): 169x30.5x128, Weight: 260 gms, Port: DC Power Jack, Speaker jack, PS2 keyboard port, PS2 mouse port, Ethernet (RJ-45) port, VGA monitor port, OS: Windows 2000 Professional, XP Home, Professional and Media Center, 2000 and 2003 Server, Linux

Price	Rs 7,900
Contact	Adline Systems
Phone	011 - 25720911
E-mail	adline@bol.net.in
Website	www.adlinesystems.com
Warranty	1 year
RATINGS	
Build quality	█ █ █ █ █
Ergonomics	█
Performance	█ █ █ █ █
Features	█ █ █ █ █
Overall Rating	█ █ █ █ █
Value for money	█ █ █ █ █



As low cost as it gets

In the early days of computing, thin client computing was extremely popular on Unix and Linux platforms. It is basically the use of a computer in client server architecture with minimum or no computing resources of its own and has to depend on a host (server) for all its computing needs.

The nComputing OfficeStation L-110 is an extremely compact and lightweight device that saves a lot on office real estate. I/O connectivity options like D-SUB, PS2 ports and a 10/100 fast Ethernet port. You cannot use USB keyboards and mice with the OfficeStation. It also features a speaker jack for audio output.

Setting up the device was a trivial task. This device is virtually plug and play with DHCP. Of course, you need to install the server software on the host system. The device worked like a charm and connected perfectly with the host system. We did face a couple of quirks like the graphics displaying at only XGA resolutions at the rate of 60 Hz in 16-bit color mode. We also noticed an occasional lag as the screen refreshed. All our test applications like browsing, e-mail, office suite, etc worked out of the box and we had no issues with running the basic applications. The system responded quickly in our tests, but if

you connect multiple OfficeStations, we recommend a system with loads of RAM if not an ultra fast processor and at least a 10,000 rpm hard drive for disk IO.

Buying a full-fledged PC (available for as less as 10 K) will prevent a single point of failure since system uptimes are extremely critical for any business. But all in all, if you want to scrimp but at the same time have a competent system administrator, the OfficeStation is the right choice as it reduces initial as well as operational costs drastically.

For: Consumes very less office real estate and low operational costs.

Against: Expensive. Display is limited to 1024x768@60 Hz at 16-bit color even if your monitor supports 1280x1024.

Advantages of a thin client

Lower TCO in terms of initial investment as well as operational costs.

- There is only a single machine to manage. The server. This lowers the total IT admin costs.
- In the absence of hardware such as a hard disk or CD drive, the resulting purchase cost is lower.
- Energy consumption is very less because they don't require any specialized cooling nor do they have

greater operating power requirements thereby saving electricity and in turn, money.

- Along with hardware, software resources can also be shared thus reducing the cost of buying licenses for individual systems.

Better basic security as well as manageability.

- A thin client provides better physical security as it does not have any locally stored data that can be stolen.
- Since a thin client is reliant upon a single server for all its computing needs, one only needs to secure a single server system.

Disadvantages of a thin client

- Since there is only a single server to manage, it also means that the thin clients rely entirely on the server for all its data needs. Thus, if for any reason the server goes down, the entire network collapses. This results in a single point of failure.
- The server hardware configuration is directly proportional to the number of thin clients connected. If the number of thin clients increases, so do the resources required, thereby increasing the cost of ownership.



External Storage

Buffalo DriveStation HD-HC160U2

Specifications: Dimensions (WxHxD mm): 45x164x200, Weight: 1.5 kgs, Interface: USB 2.0, Drive speed: 7200 rpm, Buffer size: 8 MB

Price	Rs 9,000
Contact	Buffalo Inc
Phone	011 - 41528532
E-mail	anju@melcoinc.co.jp
Website	www.buffalo-asia.com
Warranty	2 years

RATINGS

Build quality	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Performance	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Features	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Overall Rating	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Value for money	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Easy backup

The Buffalo DriveStation HD-HC160U2 is a solution for all those who complain about the security or the ease of use of external backup storage. It is an external hard drive providing a decent 160 GB of storage.

Build quality

At the heart of this device lies a 7200 rpm HD160 JJ hard drive from Samsung, which supports the faster SATA-II interface as well as an 8 MB data buffer. This drive also supports NCQ technology, which improves performance for simultaneous I/O requests. This enables the DriveStation to take on multiple streams of data read/writes without losing out much on performance.

Although the drive does not have any active cooling systems like those found in many external hard drives, its unique Heat Sink chassis ensures that the temperatures of the hard drive inside are in check. This makes the design of the device extremely important as it improves hard drive reliability as well as the working life of the device. The front panel consists of two LED's which show the device status as well as the hard drive activity status. Another unique feature of this drive is that its shutdown operation can be prescheduled. This results in saving of energy as well as

reduces the electricity usage, thus saving costs in the long run.

Features

The unique selling point of the Buffalo DriveStation is its security, ease of use and backup. The memeo backup software provides a great value add to this drive. Not only does this software support incremental backups, it also supports backup to multiple locations. It can also perform a backup based on file types and extensions and supports backup of bookmarks of Firefox as well as Mozilla browsers. It also features support for commonly used E-mail clients such as Microsoft Outlook and Outlook Express. One feature that we found missing was support for the Thunderbird mail client.

The device provides the US standard AES based file and drive encryption that ensures complete data security. Folders and drives that are encrypted using this algorithm can only be decrypted with the password provided during encryption. While the algorithm itself is very strong, like all cryptography systems, it is open to brute force attacks. So proper password selection should be ensured for better device security. The Kensington lock provides physical security while the device is in transit.

Performance

The drive provides throughputs of about 30 MB/s in sequential reads and writes which were confirmed in the real-world tests. Our assorted data test consisted of a fair mix of audio, video, images, text, MS Office and PDF documents. The drive featured an excellent throughput of 19.5 and 18.7 MB/s in the real-world read and write tests respectively which is better than most hard drives out there in the market. Although this drive does not have the cutting edge performance of other drives from Maxtor, it cannot be coined as an average performer.

The only downside of this hard drive is its cost, which comes to about Rs 56.25 per GB. When compared to other external hard drives that we reviewed earlier in our roundup, this is amongst the highest priced in the entire category.

Although 160 GB is sufficient capacity for most users, one might find it a limitation especially when one needs to backup hard drives of greater capacities since drives of 200 and 250 GB are becoming prevalent.

For: Good performance; easy-to-use backup software; good physical as well as data security.

Against: High cost per GB; limited storage capacity.

MP3 Player

Samsung YP-D1



Specifications: Dimensions (WxHxD mm): 42.2x89.8x12.3, Weight: 58 gms, Type: Flash, Capacity: 2 GB USB 2.0, 1.1, Battery: Li-ion rated 35 hours, Supported formats: ASF, MP3, and WMA Picture: JPEG

Price	Rs 11,490
Contact	Samsung India Electronics Pvt Ltd
Phone	011-41511234
E-mail	praveen.c@samsung.com
Website	www.samsung.com/in
Warranty	1 year

RATINGS

Build quality	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
Ergonomics	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Performance	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Features	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall Rating	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Value for money	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Scanner

Plustek OptiCard 820



Specifications: Dimensions (WxHxD mm): 39x175x61, Max resolution 600x600 dpi, Color depth: 48-bit, USB 2 interface.

Price	Rs 4,600
Contact	TelExcel Information Systems Ltd
Phone	011-26964070
E-mail	mahendra@telexcell.com
Website	www.telexcell.com
Warranty	1 year

RATINGS

Build quality	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Ergonomics	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
Performance	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Features	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall Rating	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Value for money	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Nano match

A bit of the iPod mania will subside with this new player from Samsung. Samsung being the sole provider of flash memory for Apple (for their 2 and 4 GB iPod Nanos) has unraveled a player in the same segment—the Samsung YP-D1 with 2 and 4 GB variants.

The player is available in two colors—silver and black. Unlike the Nano, the YP-D1 has a scratch-resistant full metallic body. Even the screen is less prone to scratches than the Nano. It has a bigger screen—1.8 inch as compared to the 1.5-inch screen of the Nano. The size of both are the same except that the YP-D1 is 1 to 2 mm thicker.

For PC connectivity, the YP-D1 has a proprietary port unlike mini-USB ports found in most of the players; so in case you lose your cable, you won't easily find a replacement in your local stores. It's directly detected as a removable device as soon as you plug it into the computer. You can straight away drag and drop

songs in a folder. It has a touch sensitive pad for vertical scrolling. It needs a few hours of usage to get used to, but once through, scrolling and navigation is a breeze. Also, you can simultaneously view pictures while listening to music. Menu navigation is intuitive and you can utilize all its features even without reading the manual.

Performance wise, the audio quality is phenomenal with tight bass, clean treble and distinct midranges. The earphones don't do justice and should be replaced with better ones.

It uses non-removable Li-Ion battery that gave us 29 hours and 12 minutes of listening time against the rated battery life of 35 hours—better than 15 hours delivered by the Nano.

For: Very good built quality; scratch resistant; very good audio quality.

Against: Doesn't support on-the-fly playlists; proprietary PC connectivity port; no FM.

Scan cards quick

Plustek's OptiCard 820 is a small, light and stylish, portable scanner, designed to convert business cards or any other document up to A6 size (105x148mm) to the digital format. Because of its size, it is easy to slip it into a laptop bag.

The scanner can be connected to the computer through the USB port, so it doesn't need an AC power adaptor. A 1.5-meter long USB cable is bundled along with special cards for calibration and cleaning.

The package consists of utilities like the Presto image-editing application, NewSoft Presto! ImageFolio 4, NewSoft Presto! Mr. Photo 3 and IRIS Cardiris software, used for importing and filing business cards. Once installed, Plustek's Smart Touch application starts with Windows. When one of the scanner's image-editing or card-scanning function buttons is pressed, it launches the relevant program.

The Cardiris application saves images of scanned business cards and uses

Optical Character Recognition (OCR) to import the text into relevant editable fields. Cardiris proved to be very accurate with a range of new business cards, but wasn't successful in getting the information into the right field all of the time.

The OptiCard 820 can scan pictures to a maximum of 600 dpi (hardware) to deliver decent quality pictures and around 1200 dpi using software interpolation. The color depth is a maximum of 48 bits per pixel. Since the role of the scanner is limited, one can't expect such a small scanner to deliver the performance of a normal scanner. The scan speed is around 7 seconds at 300 dpi in gray mode and 8 seconds in the color mode.

The scanner suits on-the-move professionals such as marketing executives, insurance officers and so on.

For: Portable, stylish looks and easy-to-use software.

Against: Some colors get distorted after scanning.



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the error's probably human.



Epson Dot Matrix Printers



● Pramod Jadhav

Sound abounds

Whether you're a movie buff, audiophile or avid gamer, there are speakers for one and all here. Take your pick from this collection of boom boxes



Sound does have a pleasing effect on the human mind. You often listen to music to replenish yourself after a hard day's work or during a long drive. Music (thanks to your trusted sound system) also sets the mood of the party at home—whether it is shaking a leg or jiving to the popular numbers. Good sound also comes into play when we enthusiastically partake of the LAN gaming parties during leisure time. When coupled with a high-quality video system, good sound makes movie watching in your living room enjoyable.

In the earlier days, in the absence of a speaker system or even a soundcard in PC systems, sound was produced by the PC speakers. They were the earliest form of speakers which produced in the crudest form. With the introduction of soundcards, PC systems were able to reproduce sound more effectively. Most motherboards have audio controllers that can produce two channel stereo sounds; the newer ones go as far as producing eight distinct sound channels. This results in almost true-to-life sound reproduction.

Speaker manufacturers are continuously striving to improve the user's audio experience. Besides the standard stereo speakers, today speakers with multi-channel audio are available, providing a surround sound experience.

In this roundup, we've covered the entire spectrum of speakers spanning 2.1 to 7.1-channel speakers, the affordable to the expensive. We did not observe any distinct changes or trends in speakers compared to our speaker roundup last year.

Some of the speakers that we have tested are capable of producing sound with razor sharp precision; many of them are loud enough for your neighbors to complain.

While talking about accuracy in sound reproduction, it is also important to mention a couple of certifications such as THX, Dolby and DTS. Once a speaker is certified by the above three, you can rest assured about its top-notch performance. Interestingly, despite not being stamped by THX, Dolby and DTS, speakers like the Klipsch 2.1 speaker delivered the best sound quality in its category. The Creative Gigaworks S750 7.1 speaker set, for instance, uses a titanium driver in their tweeters for producing high frequency sounds with precision.

Finally, for all you PC and console game freaks, surround sound speakers add to the thrill and excitement of the games you play. Many games today are THX and Dolby Digital certified. So if you like racing games, fire up a copy of *Colin McRae Rally 4.0* and the car driving experience will be breathtaking. You'll feel like you're actually driving a car. If you're into first person shooting games, the surround sound experience and environmental effects will pull you right into the game and add to the overall fun experience. Also, you'll be able judge enemy positions in advance using this knowledge to your advantage. These features are particularly useful while playing multi-player games.

With "sound" contribution of this kind, wouldn't you want to relive the *Quake 4* experience?

Test Process

The presence of a subwoofer adds immense depth to sound, thus making your movie, music or gaming experience more immersive. With the proliferation of 2.1-channel stereo and multi-channel speakers at affordable price tags, it makes more sense to opt for one of these rather than a plain jane 2.0 stereo speaker unless you've space constraints. In this roundup we have included all speakers ranging from 2.1-channel to 7.1-channel.

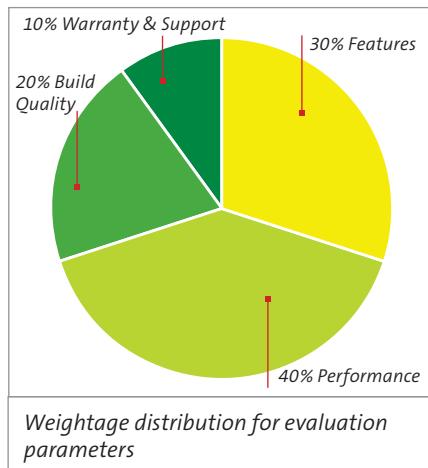
Evaluation: We classified the speakers into two groups—stereo and multi-channel. We tested them on the basis of four parameters: features, performance, build quality, and warranty and support. Let's take a close look at what went into each of these parameters to know how we awarded scores to the speakers.

Features

We started with noting down the dimensions of the subwoofer and the satellites. This is important to understand how much space the speakers would occupy. Next, we moved on to the technical specifications. We logged the rated output power (RMS) of the subwoofer and the satellites and the overall power rating. A higher power rating contributed to a greater overall feature score. We didn't consider the Peak Momentary Power Output (PMPO) as it doesn't reflect the true output. Speakers complying to standards like Dolby Digital, DTS and THX were rewarded extra points. Details such as the frequency response, signal to noise ratio, presence of bass/treble boost were also considered and points were awarded accordingly. The presence of a remote control is an added comfort when you're away from your PC watching a movie or listening to music. We noted the type of



With a control pod, the controls are just an arm's reach away



remote control present in each speaker's package and allotted weight to the controls that it offered. Finally, we skimmed through the package contents and checked for presence of cables, quick setup guide, user manual, satellite stands and screws for wall-mount. These features accounted for 30 percent of the overall score.

Performance

This section formed the core of the entire test. Being critical, the performance test



Color coded and labeled connectors ease the task of setting up the speakers

was allotted 40 percent of the overall score. Speaker performance was evaluated in games, movies and music. We fitted our test rig with the Creative Audigy 2 ZS 7.1-channel soundcard to test the speakers. Prior to testing, we calibrated each speaker for optimal performance using the soundcard's speaker calibration utility.

Games

In this section, we chose the games *Doom 3* and *NFS Most Wanted*. Since *Doom 3* features support for multi-channel sound, we could judge how the multi-channel speakers performed. The sounds of gunshots, environmental effects, quality of surround sound, clinking of shells were taken into consideration and points were awarded depending on the output quality.

Similarly, we noted the quality sound of the engine revs, screeches, crashes, environmental effects, background music in *NFS Most Wanted*.

Movies

Here, we used a clip from the movie *Saving Private Ryan* which featured multi-channel DTS encoded audio. The intense war scenes featured sounds like rumbling of tanks, firing of bazookas, bomb blasts and several other effects. In addition to this, we also used a few Dolby Digital and THX certified video clips to evaluate the quality of lows, mids, highs and surround sound.

Music

Here, we listened to English and Hindi songs ripped from original audio CDs in the WAV format. Spanning different genres, English songs included tracks like *Hard to Starboard* (from the movie *Titanic*) *Deeply Disturbed* by Infected Mushroom and *Night Rhythms* by Lee Ritenour. Hindi songs included *Taal Se Taal Mila*, *Dil Se Re* and *Hum Tum*. We paid close attention to the sound details and awarded points accordingly.

Using the Alan Parsons Test CD, we put the speakers to the grind to evaluate their precision in sound reproduction.

Build quality

While setting up the speakers, we took the presence of color-coded and labeled connectors into consideration as these help to avoid confusion and awarded extra points. The quality of cables and connectors, wall-mount capability and gradation for controls also contributed to the overall scores.

Warranty and support

Adequate warranty and support from the manufacturer is necessary so that if you encounter problems with your speakers, you know where to go. Points were given to speakers for their warranty periods, the number of service centers in the country and the number of cities in which these centers are present.

We concluded the test by computing the value for money (VFM) ratings. This index is calculated by stacking up features and performance against the price.

Stereo

Klipsh Promedia GMX A-2.1



Specifications: Channels: 2.1, Output - Subwoofer: 50 W, Satellites: 14 W, Total: 78 watts, Frequency response: 30 Hz - 20 KHz, SNR: 90 dB

Price Rs 11,150

Contact Gautam Agencies

Phone 020-25454270

E-mail sales@gautamagencies.com

Warranty 1 year

RATINGS

Features	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Performance	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Build Quality	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall Rating	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Value for money	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The Klipsch Promedia GMX A 2.1 is a **2.1 stereo speaker with a massive subwoofer**, capable of producing excellent bass, treble and mids. Setting up the speakers was very straightforward with the subwoofer acting as the main connection hub. The cables connecting the satellite speakers to the subwoofer have a single RCA jack at one end, while open wires at the other end insert into the spring clips of the sub.

The power output for the GMX A (78 watts) is pretty good for a 2.1 speaker. The control pod not only manages the operation of the speakers but also doubles up as a pre-amp and the main point of input and output. Since the volume control knobs of the subwoofer reside on the control pod, it is easier to adjust the bass level.

The GMX A beats all the other speakers hands down in the 2.1 category but it comes with a heavy price tag.

For: Excellent sound quality; great looks; easy to set up.

Against: Expensive; skimpy protection for satellite cones.

Stereo

Mercury Mega Dome 980R



Specifications: Channels: 2.1, Output - Subwoofer: 24 W, Satellites: 6 W, Total: 36 watts, Frequency response: 40 Hz - 18 KHz, SNR: 65 dB, FM reception

Price Rs 950

Contact Nisha Arora

Phone 011-66000713

E-mail nisha_arora@kobian.com

Warranty Lifetime

RATINGS

Features	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Performance	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Build Quality	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall Rating	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Value for money	<input checked="" type="checkbox"/>	<input type="checkbox"/>				

Mercury is well known for its economical products and the Mercury Megadome 980R is no different; it is extremely affordable at Rs 950. The 980R features an FM radio with scan and reset option. It has an overall power output of 36 watts. Each satellite is powered with a 3-inch driver rated at 6W RMS. The subwoofer is rated at a beefy 24W RMS.

Being a 2.1 speaker, installing it was a breeze. The build quality is average; volume for the satellites and the woofer can be controlled from the knobs residing on the woofer.

On the performance front, there is nothing much to rave about. At its price, the 980R delivers average sound quality; bass was loud and boomy with a lot of distortion.

We recommend this speaker for casual gamers and for those who are not avid music listeners. If you're looking for good performance, don't buy this one!

For: Excellent price; FM radio; easy installation.

Against: Average sound quality; average build quality.

Multi-channel

Logitech Z 5500



Specifications: Channels: 5.1, Output - Subwoofer: 180 W, Center: 69 W, Satellites: 67 W, Total: 500 watts, Frequency response: 33 Hz to 20 KHz, SNR: 99 dB

Price Rs 27,995

Contact Logitech Electronic India

Phone 022-26571160

E-mail response@logitech.com

Warranty 2 years

RATINGS

Features	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
Performance	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
Build Quality	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
Overall Rating	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Value for money	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A versatile set of high-end 5.1 speakers, the Logitech Z 5500 delivers near-perfect sound quality with no other competition in the 5.1 speaker category. It has a mammoth woofer and a digital control panel that makes controlling the volumes, bass, treble and surround so much simpler.

The satellite speakers deliver exceptional three-dimensional sound. The subwoofer is more powerful than many home-theater subwoofers and dishes out superb sound quality when you fire up an intense video game or play a high-resolution DVD.

Speaking of performance, the system outputs a very impressive 500 watts (RMS), with 62 watts dedicated to the four satellites, 69 watts to the center, and 188 watts allocated to the behemoth subwoofer.

Overall, the Logitech Z 5500 is arguably the best surround system providing you with the best music, movie and gaming experience you could ask for. So look no further if you want a rocking 5.1 speaker set.

For: Powerful; crisp sound; complies with the Dolby Digital, DTS, THX standards; wireless remote control.

Against: Expensive.

Multi-channel

Altec Lansing 251



Specifications: Channels: 5.1, Output: Subwoofer 25 W, Center and satellites 7 W each, total: 60 watts, Frequency response: 35 Hz - 18 kHz, SNR: 70 dB

Price Rs 4,000

Contact Rashi Peripherals Pvt Ltd

Phone 022-67090909

E-mail navinerc@rp.techindia.com

Warranty 2.5 years

RATINGS

Features	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Performance	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Build Quality	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall Rating	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Value for money	<input checked="" type="checkbox"/>				

The Altec Lansing 251 is an impressive surround sound system delivering good performance and comes for a great price. It has a good output of 60 watts with 7 watts allocated for each of the four satellites. Setting up the speakers was easy thanks to the colored connectors which have to be matched with the sockets at the back of the woofer.

On the front right speaker, you will notice the easily accessible volume adjustment controls. However, since the cables don't have decent length, the satellite speakers have to be positioned closer to your monitor. Performance wise, each of the small satellites delivers an amazing output while the subwoofer thumps away in the background. The sound quality is average and there was a slight distortion when pitched at high volume.

The 251 is essentially aimed toward gamers and movie buffs looking for good performance vis-a-vis good price. So check it out before you decide to buy one.

For: Unbeatable value; great price; easy to set up.

Against: Distortion at high volumes; short cables.

| Terminator

THX: An acronym for Tomlinson Holman's eXperiment, THX is a standard that improves home theater performance dramatically by bringing critically acclaimed sound to visual presentations of movies, music and games. Every THX certified home theater product is engineered and rigorously tested to guarantee that your home entertainment experience is exactly similar to that of the filmmaker, recording artist or game developer. The two chief requirements for the ultimate home theater experience are:

Performance standards: Apply an exacting set of technical requirements designed to produce optimal sound fields.

Patented technologies: Design and develop accurate technologies to capture and deliver studio quality sound to the home.

Manufacturers strive to maintain the THX standard during the product development phase by building components of a home theater system (such as amplifiers, video playback equipment, speakers, equalizers, etc) pertaining to THX specifications. These components then undergo a series of usability, performance and certification tests. It is only after a component meets the THX criteria that the exclusive THX certified status is granted following which final production begins.

Dolby Digital: This is a sophisticated and versatile audio encoding/decoding technology. This technology can transmit mono, stereo (two-channel), or up to 5.1-channel surround sound (discrete multi-channel audio). The superior coding efficiency of Dolby Digital and its ability to deliver high-quality discrete multichannel audio without compromising video quality has made it the designated audio standard for DVD worldwide.

The sound information in each of the six channels is distinct and independent. These six channels are together described as a "5.1-channel" system, because there are five full-bandwidth channels with 3 Hz to 20 KHz frequency range for Front Left and Right, Center, and Surround, plus one "Low Frequency Effects" (LFE) subwoofer

channel devoted to frequencies from 3 to 120 Hz.

DTS: Digital Theater System Digital Surround is a DVD audio encoding format. It requires a decoder, either in the player or in an external receiver. Developed by Digital Theater Systems Inc, it is also used in many movie theaters around the world.

The best way to experience DTS on the PC is via a multi-channel speaker system. The choice is whether to decode DTS inside or outside your PC. And in order to experience 5.1-channel DTS software-based decoding on a PC, you must own a multi-channel soundcard.

Frequency response: A speaker's frequency response specification refers to the range of frequencies a speaker can reproduce without distorting. The human ear can detect frequencies between 20 Hz and 20,000 Hz though a more realistic range might be something like 30 Hz to 15 KHz. Different speakers are designed to reproduce different frequencies. A subwoofer doesn't deliver high frequency response, while a satellite speaker doesn't dish out good bass response. But apart from the physical limitations associated with the size and driver configuration, speakers tend to overemphasize certain frequencies and neglect others as a necessary byproduct of converting electrical energy into acoustic energy.

RMS: RMS stands for Root Mean Square. RMS is the process used to determine the average power output of the speakers over a long period of time. RMS is derived from an equation, which produces the most mathematically accurate measure of a speaker's power output. The RMS value is often seen listed as "watts RMS" on product packaging.

The alternative to RMS is PMPO (peak momentary power output), which represents peak output measured in microseconds. Most manufacturers mention the PMPO rating instead of the RMS rating. If RMS is not mentioned, divide the PMPO by eight to get an approximate RMS rating.

I Buying guide

Why buy new speakers you may ask? Well, the fact is traditional stereo speakers cannot do justice to most modern games and movies. So if you are a gaming freak or a movie buff or an avid listener with a massive collection of MP3s and audio CDs, it is better to invest in a speaker system to derive the optimum experience. But choosing a speaker set suiting your needs is not easy as there are lots of choices available in the market. We list down a couple of points that will help you buy your speaker no matter what the budget.

Budget

Money is still one of the most important factors while buying a speaker system. The speakers that we tested ranged from Rs 1500 to a whopping Rs 33,000. The best way to buy a speaker within your price bracket is by analyzing your requirements. It is possible to get a decently sounding system for much less if you are clear about what you need. We spell it out for you:

Classification

The current speaker systems are broadly classified into the number of speakers available for sound output.

Stereo speaker system

Traditional stereo speakers contain two speaker units that output all frequencies of sound viz bass, mid tones and treble. While they suffice the listening needs of many users, they are not capable of producing extremely low frequencies very effectively. We recommend these speakers for users who are extremely low on budget and do not care about high quality sound output.

2.1 speaker system

We recommend that you buy at least a 2.1 speaker system. Such a system consists of stereo speakers that produce the mid tones and treble while the bass is produced by the sub woofer. A separate sub produces low frequency sounds like drum beats and so on. Such speakers are ideally suited for those who generally listen to MP3s and audio CDs. We recommend the Logitech X230 as your 2.1 desktop companion.



The Logitech X230 delivers great bang for the buck

4.1 speaker system

A 4.1 speaker system consists of two additional speakers. The additional speakers should be placed behind the listener so that there is a sense of direction in sound. However, the input audio has to be encoded in a specific way to make sure the sound is well directed. A minimum of 4.1 channel speaker system is recommended if you are a movie buff.

5.1 speaker system

A 5.1 speaker system is similar to a 4.1 speaker setup with an additional center speaker. Its sound experience is almost similar with the addition of clear vocals playing from the center speaker. A 5.1 speaker system is the current standard in DVDs and most recent games. A 5.1 setup is what we recommend if you want the best of music, movies and games.

6.1 and 7.1 speaker system

Since it rare to find audio/video encoded using 7.1 channel audio, don't rush to buy



The Creative Gigaworks S750 is another contender to bring the house down!

these top-of-the-line speaker systems. Besides, latest technology comes at a price. A 7.1 channel speaker system will definitely burn a hole in your pocket. The Creative Gigaworks S750 provides exactly that, great technology and sound at a high price point.

Other factors that need to be considered while buying a speaker system are:

Speaker power (wattage)

The loudness of the sound that you hear is directly proportional to the speaker wattage. The wattage of a speaker system is measured in watt RMS (Root Mean Square). Objects like curtains, carpets, etc result in damping of sound, thus speakers with higher RMS should be worth a buy. Higher RMS speaker systems are better for a large rooms. Gamers can skip this as they have to maintain a distance of two feet from the monitor and the speakers. This results in keeping the volume low and negates the idea of getting loud playing speakers in the first place.

Speaker positioning

It doesn't make sense in buying a multi-channel speaker system and stacking them all up in a row on the desk. THX, for instance, clearly specifies the kind of environment necessary to install speakers having surround sound capability. So keep room characteristics in mind before making any purchase decisions.

Input sources

Invest in a dedicated soundcard. This will offload some of the processing needs of the CPU and will not result in choppy sounds that you sometimes come across while playing games. Make sure that the MP3s you play are of high quality. We recommend MP3s encoded with a bit rate of at least 192 kbps.

Most importantly, listen to the speakers before buying them! In fact, take a set of your favorite audio, MP3 and movie disks to the showroom and have the salesmen audition the speakers with the sounds you would like to hear. The best sound is what appeals your ears the most.



Personal Take



Anand Tuliani
anand.tuliani@chip-india.com

Great speakers are not those that are loud or fancy looking. Rather, it is the precision in sound reproduction which tells how good a set of speakers is. Also, don't be fooled by 4800 watts PMPO. These figures are nothing but gimmicks. In reality, it might be just 80 watts RMS.

Another thing to keep in mind is not to invest in multi-channel speakers if you are not a movie buff or avid music listener.

For audiophiles, the Klipsch Promedia GMX A-2.1 is the best you can get if you've got the bucks. However, if you want great sound at a good price, there's nothing to beat the Logitech X-230. In the multi-channel category, the Logitech X-530 rocks!

"I would be in seventh heaven if I received a mid-term raise—I'd definitely buy one of these!"



Faheem Sayed
faheem.sayed@chip-india.com

Among all the speakers we tested, I vouch for the Logitech Z5500; it's a versatile high-end 5.1 speaker system. As it conforms to the Dolby Digital, DTS and THX standards, it delivers crisp and powerful sound with superb bass and treble sounds. Being a perfect blend of form and function, it is in fact the best choice if you're looking for the ultimate home theater experience in your living room.

In the 2.1 speaker system category, the Logitech X-230 has no match. For such a small speaker setup, the 230 delivered excellent sound output, with considerably good bass, treble and mids.

So if you're looking for a 2.1 speaker system at an affordable price, go for this without giving a second thought.

SpecScan



1



2

CATEGORY	STEREO	
Name	Altec Lansing MX5021	Klipsch Promedia GMX A-2.1
Contact	Rashi Peripherals Pvt Ltd	Gautam Agencies
Phone	022-67090909	020-25454270
E-mail	navinderc@rp.techindia.com	sales@gautamagencies.com
Price	Rs 8,200	Rs 11,150
Overall scoring		
Features (Out of 30)	15.23	14.00
Performance (Out of 40)	28.74	28.96
Build Quality (Out of 20)	18.40	15.90
Warranty and support (Out of 10)	5.02	5.92
Overall (Out of 100)	Total: 67.38	Total: 64.77
Value for money	██████	██████
Features		
Speaker Type	2.1	2.1
Dimensions (WxHxD) cms		
Subwoofer	22 x 39.8 x 31	27.3 x 26 x 35
Satellites	13.2 x 26 x 6.3	14 x 19 x 16
Center Channel	NA	NA
Power Rating (RMS) Watts		
Satellites/Sub/Total	20 / 50 / 90	14 / 50 / 78
Standards supported		
Dolby Digital/DTS/THX	✗ ✗ ✓	✗ ✗ ✗
Frequency Response	30 Hz to 22 KHz	30 Hz to 20 KHz
Signal to Noise Ratio (dB)	80	90
Remote Control Type (Inline/control pod)	✗ ✓	✓ ✓
Package Contents		
Cables	✓	✓
Quick Setup Guide	✓	✓
Manual	✓	✓
Satellite Stands	✗	✓
Shoe pads for sub	✓	✓
Screws for wallmounts	✓	✗
Performance		
Gaming (each out of 10)		
Doom 3 / NFS Most Wanted	7.25 / 8	6 / 8.33
DVD Movies (each out of 10)		
Saving Private Ryan (DTS Video)	7.33	8.17
Doom: The Movie (DivX)	8	5
Dolby Digital videos	3.42	3.92
THX videos	7.13	8.33
Music (each out of 10)		
Hindi	7.83	9.00
English	8.01	7.53
Build quality		
Speaker cabinet sturdiness	Good	Good
Quality of cables	Good	Average
User-connectable cables	✓	✓
Swivel capable	✗	✓
Wall mountable	✓	✗
Quality of buttons & knobs	Good	Good
Warranty & Support		
Number of authorised service centres	29	35
Number of cities where service centres are present	29	35
Period of warranty (Years)	1	1



Logitech X-230	Creative I-Trigue 3400	Altec Lansing FX 6021	Perx M2S	Artis S700
Logitech Electronic India 022-26571160 response@logitech.com Rs 3,995	Nishant Mathur 9840160005 nishant_mathur@ctl.creative.com Rs 4,500	Rashi Peripherals Pvt Ltd 022-67090909 navinder@rptechindia.com Rs 9,500	Vivek Singh 9322505509 jorjyumbai@yahoo.co.in Rs 2,500	Kunhar Peripherals Pvt Ltd 022-66345758 sales1@kunhar.com Rs 2,850
11.91	13.37	13.55	9.23	10.33
26.00	23.12	18.68	25.57	20.18
16.80	13.20	15.80	15.30	18.40
6.25	3.82	5.02	2.77	3.67
Total: 60.96	Total: 53.51	Total: 53.04	Total: 52.87	Total: 52.57
██████	██████	██████	██████	██████
2.1	2.1	2.1	2.1	2.1
15.2 x 23 x 23.5 6.3 x 20.3 x 7.6 NA	26.8 x 31 x 18 8 x 18.9 x 6 NA	21.6 x 40.6 x 20 6.3 x 36.5 x 19 NA	18 x 30 x 32 10 x 20 x 11.5 NA	16.5 x 24.5 x 34 9 x 9 x 10 NA
12 / 20 / 32	8 / 24 / 40	12.5 / 50 / 75	NA	NA
✗ ✗ ✗ 40 Hz to 20 KHz 96	✗ ✗ ✗ 20 Hz to 20 KHz 80	✗ ✗ ✗ 32 Hz to 18 KHz 75	✗ ✗ ✗ 20 Hz to 20 KHz 80	✗ ✗ ✗ 30 Hz to 20 KHz 65
✗ ✗	✗ ✓	✗ ✓	✗ ✗	✗ ✗
✓ ✓ ✓ ✓ ✓ ✓ ✗	✓ ✓ ✓ ✓ ✓ ✓ ✗	✓ ✓ ✓ ✓ ✓ ✓ ✗	✓ ✓ ✗ ✗ ✓ ✗	✓ ✓ ✓ ✓ ✓ ✓ ✗
4.75 / 9	4 / 7	3.5 / 6.5	5 / 8	4 / 5.17
4.83	7.33	6.67	7.50	5.17
5	8	8	8	5
2.33	1.83	2.33	3.92	2.67
4.96	6.29	4.33	7.17	4.92
8.17	7.00	4.92	6.50	6.25
9.05	6.08	3.86	6.33	6.27
Good	Good	Good	Good	Good
Good	Good	Good	Average	Good
✗	✗	✗	✓	✓
✗	✗	✗	✗	✗
✓	✗	✓	✗	✓
Good	Good	Good	Good	Good
45	21	29	14	20
30	21	29	14	20
1	1	1	1	1

SpecScan

STEREO			
CATEGORY	Altec Lansing CS21	Mercury Mega Dome 1980W	Altec Lansing ATP3
Name	Altec Lansing CS21	Mercury Mega Dome 1980W	Altec Lansing ATP3
Contact	Rashi Peripherals Pvt Ltd	Nisha Arora	Rashi Peripherals Pvt Ltd
Phone	022-67090909	011-66600713	022-67090909
E-mail	navinderc@rp.techindia.com	nisha_arora@kobian.com	navinderc@rp.techindia.com
Price	Rs 6,500	Rs 1,200	Rs 3,200
Overall scoring			
Features (Out of 30)	10.96	10.27	10.70
Performance (Out of 40)	21.74	22.94	18.91
Build Quality (Out of 20)	12.00	11.32	13.20
Warranty and support (Out of 10)	5.02	4.21	5.02
Overall (Out of 100)	Total: 49.72	Total: 48.74	Total: 47.83
Value for money	██████	███████	███████
Features			
Speaker Type	2.1	4.1	2.1
Dimensions (WxHxD) cms			
Subwoofer	19 x 36.5 x 31	15 x 20 x 26.3	24.8 x 21.3 x 35.5
Satellites	11 x 21 x 11.4	10 x 13.8 x 10.7	10.6 x 24.2 x 10.6
Center Channel	NA	NA	NA
Power Rating (RMS) Watts			
Satellites/Sub/Total	30 / 50 / 110	6 / 24 / 48	6 / 18 / 30
Standards supported			
Dolby Digital/DTS/THX	✗ ✗ ✗	✗ ✗ ✗	✗ ✗ ✗
Frequency Response	35 Hz to 18 KHz	20 Hz to 20 KHz	45 Hz to 18 KHz
Signal to Noise Ratio (dB)	86	65	70
Remote Control Type (Inline/control pod)	✗ ✗	✗ ✗	✗ ✗
Package Contents			
Cables	✓	✓	✓
Quick Setup Guide	✓	✗	✓
Manual	✓	✓	✓
Satellite Stands	✓	✓	✓
Shoe pads for sub	✗	✓	✓
Screws for wallmounts	✗	✗	✗
Performance			
Gaming (each out of 10)			
Doom 3 / NFS Most Wanted	4.75 / 6.5	5.75 / 5	5.5 / 5.17
DVD Movies (each out of 10)			
Saving Private Ryan (DTS Video)	5.50	7.00	5.67
Doom: The Movie (DivX)	5	8	8
Dolby Digital videos	2.50	5.92	3.92
THX videos	4.75	4.21	4.79
Music (each out of 10)			
Hindi	6.50	5.83	3.33
English	6.59	5.98	4.18
Build quality			
Speaker cabinet sturdiness	Good	Good	Good
Quality of cables	Good	Poor	Good
User-connectable cables	✗	✗	✗
Swivel capable	✗	✗	✗
Wall mountable	✗	✗	✗
Quality of buttons & knobs	Good	Poor	Good
Warranty & Support			
Number of authorised service centres	29	20	29
Number of cities where service centres are present	29	27	29
Period of warranty (Years)	1	1	1



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12

13

14

15

Mercury Mega Dome 980R	Umax UPB302	Typhoon Onyx 91030	Altec Lansing 121i	Artis S111R-FM
Nisha Arora 011-66600713 nisha_arora@kobian.com Rs 950	Neoteric Infomatique Pvt Ltd 022-39828600 sales@neoteric.co.in Rs 975	Aditya Infotech Ltd 9371298668 yogesh_dutta@adityagroup.com Rs 2,750	Rashi Peripherals Pvt Ltd 022-67090909 navinderc@rp.techindia.com Rs 1,250	Kunhar Peripherals Pvt Ltd 022-66345758 sales1@kunhar.com Rs 1,800
8.27	6.92	7.00	7.06	7.34
21.16	19.03	21.72	17.48	16.43
11.12	13.70	11.40	13.40	15.00
6.88	4.42	3.82	5.02	3.67
Total: 47.43	Total: 44.07	Total: 43.94	Total: 42.95	Total: 42.43
██████████	███████████	███████□□□	██████████□□	███████□□□
2.1	2.1	2.1	2.1	2.1
15 x 20 x 26.3 9 x 13.8 x 10.7 NA	15 x 20 x 23 9 x 13 x 9.8 NA	15.2 x 22.5 x 26 8.5 x 14.5 x 9 NA	15 x 22.1 x 27.4 8.6 x 12.6 x 8.8 NA	17 x 24 x 21.5 12 x 17 x 19.5 NA
6 / 24 / 36	4 / 17 / 25	7 / 20 / 34	5.5 / 9 / 20	NA
✗ ✗ ✗ 40 Hz to 18 KHz 65	✗ ✗ ✗ 20 Hz to 20 KHz 75	✗ ✗ ✗ 35 Hz to 20 KHz 75	✗ ✗ ✗ 20 Hz to 20 KHz 70	✗ ✗ ✗ 20 Hz to 20 KHz 80
✗ ✗	✗ ✗	✗ ✗	✗ ✗	✗ ✗
✓ ✗ ✓ ✓ ✓ ✗	✓ ✗ ✓ ✗ ✓ ✗	✓ ✗ ✓ ✗ ✓ ✗	✓ ✓ ✓ ✗ ✗ ✗	✓ ✗ ✓ ✗ ✓ ✗
4.75 / 6	4.75 / 6	4.75 / 6	3 / 4.33	3.5 / 4.83
5.83 5 1.83 6.29	4.83 5 1.83 5.54	5.50 5 2.33 7.00	4.50 8 2.17 6.63	5.67 3 2.33 5.63
6.25 5.74	5.83 3.94	6.33 5.76	4.92 3.74	3.83 4.30
Good Poor ✗ ✗ ✗	Good Average ✗ ✗ ✓	Average Good ✗ ✗ ✗	Good Good ✗ ✗ ✗	Good Good ✗ ✗ ✗
Good	Good	Good	Good	Good
20 27 5	25 25 1	21 21 1	29 29 1	20 20 1

SpecScan

16



17



18

CATEGORY	MULTI-CHANNEL		
Name	Umax UPB 3800	Soomoku AV-2200	Zebtronics SW 8000
Contact	Neoteric Infomatique Pvt Ltd	Sunrise Enterprises	Top Notch Infotronix Pvt Ltd
Phone	022-39828600	022-23872017	044-26616202
E-mail	sales@neoteric.co.in	samraj99@bom5.vsnl.net.in	zebronics@zebronics.com
Price	Rs 1,600	Rs 2,450	Rs 2,200
Overall scoring			
Features (Out of 30)	10.94	10.05	9.92
Performance (Out of 40)	16.68	18.59	16.17
Build Quality (Out of 20)	10.30	12.40	10.40
Warranty and support (Out of 10)	4.42	0.97	3.35
Overall (Out of 100)	Total: 42.34	Total: 42.00	Total: 39.84
Value for money	██████	██████	██████
Features			
Speaker Type	4.1	2.1	2.1
Dimensions (WxHxD) cms			
Subwoofer	22 x 21 x 21.2	15.5 x 30 x 24	21.5 x 24 x 16
Satellites	9 x 14.5 x 10	11 x 19 x 13	9.5 x 16.5 x 12
Center Channel	NA	NA	NA
Power Rating (RMS) Watts			
Satellites/Sub/Total	10 / 25 / 65	NA	30 / 30 / 60
Standards supported			
Dolby Digital/DTS/THX	✗ ✗ ✗	✗ ✗ ✗	✗ ✗ ✗
Frequency Response	200 Hz to 18 KHz	20 Hz to 20 KHz	35 Hz to 18 KHz
Signal to Noise Ratio (dB)	85	75	80
Remote Control Type (Inline/control pod)	✗ ✓	✗ ✗	✗ ✗
Package Contents			
Cables	✓	✓	✓
Quick Setup Guide	✓	✓	✓
Manual	✓	✓	✓
Satellite Stands	✗	✗	✗
Shoe pads for sub	✓	✓	✓
Screws for wallmounts	✗	✗	✗
Performance			
Gaming (each out of 10)			
Doom 3 / NFS Most Wanted	5 / 4.33	4 / 6	2.5 / 4.83
DVD Movies (each out of 10)			
Saving Private Ryan (DTS Video)	4.33	4.17	5.50
Doom: The Movie (DivX)	5	5	3
Dolby Digital videos	1.83	2.33	1.83
THX videos	4.33	5.21	6.38
Music (each out of 10)			
Hindi	4.00	4.75	3.50
English	4.61	5.15	5.01
Build quality			
Speaker cabinet sturdiness	Good	Good	Good
Quality of cables	Average	Good	Good
User-connectable cables	✓	✗	✗
Swivel capable	✗	✗	✗
Wall mountable	✗	✗	✗
Quality of buttons & knobs	Average	Good	Poor
Warranty & Support			
Number of authorised service centres	25	2	9
Number of cities where service centres are present	25	2	9
Period of warranty (Years)	1	1	3



19



20



21



22



23

Logitech Z5500 Digital	Creative Gigaworks S750	Logitech X530	Intex IT-4800W	Creative Inspire T6060
Logitech Electronic India 022-26571160 response@logitech.com Rs 27,995	Nishant Mathur 9840160005 nishant_mathur@ctl.creative.com Rs 34,000	Logitech Electronic India 022-26571160 response@logitech.com Rs 6,995	Intex Technologies Pvt Ltd 1800-11-6789 info@intextechnologies.com Rs	Nishant Mathur 9840160005 nishant_mathur@ctl.creative.com Rs 5,800
24.88	26.40	15.88	18.61	16.95
38.83	32.29	31.39	21.13	25.43
18.40	18.40	16.80	13.60	15.50
6.92	3.82	6.25	7.33	3.82
Total: 89.03	Total: 80.90	Total: 70.33	Total: 62.54	Total: 61.70
██████████	██████████	██████████	██████████	██████████
5.1	7.1	5.1	5.1	5.1
33 x 33 x 38	31.5 x 31.5 x 31.5	15.3 x 23 x 23.5	17 x 31 x 34	25.3 x 18.2 x 28.6
9.5 x 20 x 10	11.6 x 14.5 x 20.5	6.35 x 20.3 x 7.6	10 x 15 x 13	8.9 x 17.8 x 12.3
16.5 x 13.5 x 10	11.6 x 14.5 x 20.5	6.35 x 20.3 x 7.6	25 x 10 x 13	8.9 x 17.8 x 12.3
61 / 187 / 69 / 500	70 / 210 / 70 / 700	25 / 45 / 15.5 / 70	60 / 120 / 100 / 460	8 / 22 / 18 / 72
✓ ✓ ✓ 33 Hz to 20 KHz 93.5	✗ ✗ ✓ 25 Hz to 20 KHz 99	✗ ✗ ✗ 40 Hz to 20 KHz 96	✗ ✗ ✗ 20 Hz to 20 KHz 75	✗ ✗ ✗ 40 Hz to 20 KHz 80
✗ ✓ 93.5	✗ ✓ 99	✗ ✗ 96	✗ ✗ 75	✗ ✓ 80
✓ ✓ ✓ ✓ ✓ ✓ ✗	✓ ✓ ✓ ✓ ✓ ✓ ✗	✓ ✓ ✓ ✓ ✓ ✓ ✗	✓ ✓ ✓ ✗ ✓ ✓ ✗	✓ ✓ ✓ ✓ ✓ ✓ ✗
10 / 9.67	7.75 / 8.17	8 / 9	5.75 / 5.17	5.75 / 6.5
10.00	7.67	7.83	5.17	5.50
8	5	5	8	5
9.17	8.67	7.08	5.25	6.75
9.75	9.17	7.96	7.96	8.33
10.00	8.33	7.67	5.00	6.25
10.00	8.04	8.30	5.31	6.02
Good	Good	Good	Good	Good
Good	Good	Good	Good	Average
✓	✓	✗	✓	✗
✗	✗	✗	✗	✗
✓	✓	✓	✗	✓
Good	Good	Good	Good	Good
45	21	45	46	21
30	21	30	43	21
2	1	1	1	1



SpecScan



24



25



26

MULTI-CHANNEL			
Name	Artis X10/Mini	Artis S6600R	Altec Lansing 251i
Contact	Kunhar Peripherals Pvt Ltd	Kunhar Peripherals Pvt Ltd	Rashi Peripherals Pvt Ltd
Phone	022-66345758	022-66345758	022-67090909
E-mail	sales1@kunhar.com	sales1@kunhar.com	navinderc@rp.techindia.com
Price	Rs 12,000	Rs 8,500	Rs 4,000
Overall scoring			
Features (Out of 30)	16.18	16.28	14.41
Performance (Out of 40)	25.95	24.20	24.75
Build Quality (Out of 20)	15.60	13.70	12.30
Warranty and support (Out of 10)	3.67	3.67	5.02
Overall (Out of 100)	Total: 61.40	Total: 57.84	Total: 56.47
Value for money	██████	██████	██████
Features			
Speaker Type	5.1	5.1	5.1
Dimensions (WxHxD) cms			
Subwoofer	27.6 x 38.5 x 39.7	20.5 x 26 x 33	17.5 x 28 x 19
Satellites	8 x 15.7 x 10.5	13 x 33 x 30.5	10 x 14 x 9
Center Channel	8 x 15.7 x 10.5	30 x 8.5 x 8.5	10 x 14 x 9
Power Rating (RMS) Watts			
Satellites/Sub/Total	28 / 90 / 28 / 146	NA	7 / 25 / 7 / 39
Standards supported			
Dolby Digital/DTS/THX	✗ ✗ ✗	✗ ✗ ✗	✗ ✗ ✗
Frequency Response	30 Hz to 20 KHz	30 Hz to 20 KHz	35 Hz to 18 KHz
Signal to Noise Ratio (dB)	80	70	70
Remote Control Type (Inline/control pod)	✗ ✗	✗ ✗	✗ ✗
Package Contents			
Cables	✓	✓	✓
Quick Setup Guide	✓	✓	✓
Manual	✓	✓	✓
Satellite Stands	✗	✓	✓
Shoe pads for sub	✓	✓	✓
Screws for wallmounts	✗	✗	✗
Performance			
Gaming (each out of 10)			
Doom 3 / NFS Most Wanted	5.75 / 7.67	5 / 7	6.5 / 7
DVD Movies (each out of 10)			
Saving Private Ryan (DTS Video)	5.33	7.00	6.00
Doom: The Movie (DivX)	5	5	8
Dolby Digital videos	5.75	5.75	5.25
THX videos	6.13	6.88	6.25
Music (each out of 10)			
Hindi	6.25	6.00	5.83
English	7.96	5.87	5.61
Build quality			
Speaker cabinet sturdiness	Good	Good	Good
Quality of cables	Good	Average	Average
User-connectable cables	✓	✗	✗
Swivel capable	✗	✗	✗
Wall mountable	✗	✗	✗
Quality of buttons & knobs	Good	Good	Good
Warranty & Support			
Number of authorised service centres	20	20	29
Number of cities where service centres are present	20	20	29
Period of warranty (Years)	1	1	1



Artis S7500R	Artis S5500R	Creative Inspire 4400	Zebronics SW 10000R	Altec Lansing 151i
Kunhar Peripherals Pvt Ltd 022-66345758 sales1@kunhar.com Rs 4,650	Kunhar Peripherals Pvt Ltd 022-66345758 sales1@kunhar.com Rs 4,250	Nishant Mathur 9840160005 nishant_mathur@ctl.creative.com Rs 3,000	Top Notch Infotronics Pvt Ltd 044-26616202 zebronics@zebronics.com Rs 3,600	Rashi Peripherals Pvt Ltd 022-67090909 navinder@rptechindia.com Rs 3,500
15.11	13.90	11.51	14.96	11.61
20.89	21.32	18.94	18.35	22.03
13.00	12.80	16.80	13.70	8.70
3.67	3.67	3.82	3.35	5.02
Total: 52.66	Total: 51.68	Total: 51.07	Total: 50.36	Total: 47.35
███████□	███████□	███████	███████□	███████□
5.1	5.1	4.1	5.1	5.1
16 x 27 x 30 9 x 14 x 9 9 x 14 x 9	25 x 26 x 25 10 x 11.5 x 10 10 x 11.5 x 10	19.2 x 21.1 x 19.2 9.5 x 8.7 x 9.5 NA	17 x 30 x 39 10 x 18.5 x 9 10 x 18.5 x 9	15 x 22 x 30.5 8.6 x 12.7 x 9 8.6 x 12.7 x 9
NA	NA	6 / 17 / NA / 41	NA	4.5 / 12 / 4.5 / 34.5
✗ ✗ ✗ 20 Hz to 20 KHz 80	✗ ✗ ✗ 20 Hz to 20 KHz 42	✗ ✗ ✗ 40 Hz to 20 KHz 80	✗ ✗ ✗ 35 Hz to 18 KHz 62	✗ ✗ ✗ 30 Hz to 20 KHz 75
✗ ✗	✗ ✗	✗ ✓	✗ ✗	✗ ✗
✓ ✗ ✓ ✗ ✓ ✓	✓ ✓ ✓ ✗ ✓ ✗	✓ ✓ ✓ ✗ ✓ ✗	✓ ✗ ✓ ✓ ✓ ✗	✓ ✓ ✓ ✗ ✗ ✗
5.75 / 5.5	4.5 / 6.17	5 / 5.5	4 / 4.67	6.5 / 6
4.00	5.67	4.17	7.00	4.33
5	5	3	5	5
5.92	5.00	5.17	4.67	4.67
5.96	5.75	5.42	3.58	6.75
5.00	5.67	4.67	4.58	4.83
4.28	4.92	3.94	4.70	5.20
Good	Good	Good	Good	Good
Good	Good	Good	Average	Average
✗	✓	✗	✗	✗
✗	✗	✗	✗	✗
✓	✓	✓	✗	✗
Average	Poor	Good	Good	Average
20	20	21	9	29
20	20	21	9	29
1	1	1	3	1



AVOX Jukebox

This month, we review one of the funkiest devices we've come across in a long time—a portable DivX movie player that fits in the palm of your hands!

Jukebox

Vantec AVOX-100

Specifications: HDD type: 2.5-inch IDE HDD, Interface/Ports: USB 2.0 (USB 1.1 Compatible), Power supply: External 5V DC, Dimensions [WxHxD mm]: 132x77x14, HDD File System: NTFS/FAT32, Video output: NTSC/PAL

Price	Rs 5,000
Contact	Tejas Sheth
Phone	9821349177
E-mail	tejas@apical.in
Website	http://www.vantectw.com
Warranty	1 year
RATINGS	
Build quality	█ █ █ █ █
Ergonomics	█ █ █ █ █
Performance	█ █ █ █ █
Features	█ █ █ █ █
Overall Rating	█ █ █ █ █

This is a new addition to our family of feature articles in the Hardware section. As we've been coming across plenty of interesting and innovative products, we've decided to give you a closer look at them—welcome to the first of our regular series of "Product of the month" articles. In our constant endeavour to give you ever more relevant content, this section is started in response to your SMSes for more in-depth reviews of products. In this article, we dissect, benchmark and get our hands dirty with

the best product in our labs during the month. Have fun reading and keep the feedback coming!

This month, we bring you the Vantec Avox Jukebox, a portable MPEG-4 movie player enclosure that can take your choice of 2.5-inch hard disk. Vantec started off with cooling products with their popular Stealth and Tornado fans. Since then, they have added external cases and case modding products to their line up—the Vantec Avox is one of the newer additions to their product arsenal.





The 2.5-inch hard drive fitted snugly into the device enclosure

The Avox is primarily a 2.5-inch hard disk enclosure—simply slide in a drive of any capacity and directly start using it as an external hard drive. However, there's more to it. With its integrated video output ports, you can connect it to your television and play gigabytes of movies, videos and MP3s stored on the hard drive. Best of all, it is also capable of playing DivX and XviD files as it features an integrated video decoder chip. It also supports the USB OTG (On-The-Go) function where you can directly connect it to USB cameras or pen drives and back up the data on its hard drive without the need of a computer. We will explain these features in greater detail up ahead in the article.

Installation

This is very simple. Open the case; align a 2.5-inch hard drive (not included in the package), screw back the lid and you are ready to roll! A 40 GB laptop hard drive will cost you approximately Rs 3,000. The bundle includes all that you will require for utilizing the full potential of this multi-faceted device.

Let's first run through all its features and then check its compatibility with different multimedia files. Lastly, we'll take a look at the picture quality.

The grey matter

The heart of this device is an ESS ES6425 decoder chip that handles all the audio and video decoding. This chip happens to be a second-generation Digital Media processor with an enhanced performance engine to decode MPEG-4 video at D1 (704 x 506) resolution along with a state-of-the-art progressive scan NTSC/PAL video encoder for a sharp and flicker-free video display output. This approximates to a DVD resolution. It cannot process videos



The heart of the device is its audio/video decoder chip on the PCB

at HDTV resolutions of 720p and 1080i as this is beyond the processing limits of decoder chip. The same device is sold by Vantec in the US with a different design and a different decoder manufactured by Sigmatel. This one is significantly superior (capable of playing videos at 720p and 1080i, that is HDTV) and is a good \$30 more expensive compared to the one sold here. But we don't miss the HDTV capability as there aren't any HDTV broadcasts in India yet. So if you happen to have downloaded HD videos and a HDTV-capable LCD TV, you shouldn't expect more than DVD resolution from this device. ESS 6425's product manual states that the integrated NTSC/PAL encoder provides composite, S-Video and YUV (component) outputs. However, the cable provided by Vantec only featured composite and S-Video video outputs. Also, with a proprietary jack plugging into the unit, it will be difficult to get a third party component cable if you need one.

Setup and features

While using this device, it was clear that Vantec had done its homework well. They have included every possible accessory to make the fullest of your device. Now let's run through the features offered by this device.

USB 2.0 External Storage

With the ability to take on any type of 2.5-inch hard disk, this device can be used as an external storage device for storing any type of data file. Based upon the USB 2.0 interface, it delivers maximum speeds of up to 400 Mb/sec and is also backward

compatible with older USB 1.1 computers.

Setup: The device has a switch that can be set to device mode, allowing it to be connected to the computer using a standard USB cable. It is directly detected as a removable device in Windows XP and shows up in the drive listing as does any USB drive. You will require drivers to use it in Windows 98 and these are provided on the bundled CD. It is also compatible with Mac OS 10 and above. With most newer computers, it will draw power from the same USB port. But in case of older USB 1.1 ports, you may need to use the additional power.

Additional USB power cable



The USB power connection draws 5-volt power from the USB port itself

The Avox bundles a cable with a USB header at one end and a small pin at the other, connecting to the 5V port on the device. Just plug it into a spare USB port and you are ready to go. This is the most convenient of the three options.

Power adapter



There is an external power connection if you need it, but based on US-standard pins

There is also an external 3-pin power adapter that drives the 5V socket on the device. However, the unit we received featured the square plug pins (American standard), so you will need a converter to use it in India.

Battery attachment*The handy external AA-sized battery pack*

Don't have a spare USB port? Don't have a plug point near you? Fear not, the package also includes an external battery attachment that takes on four AA-sized batteries. This is especially useful when using the USB OTG capabilities to transfer data from other USB devices without the need for a computer.

Movie-music player and picture viewer*S-Video, Composite and power pins*

This is the most interesting feature of the device—you can dump a whole load of DivX and MP3 files on the hard disk of this device and directly hook it up to your TV. To do this, slide the switch to "TV" on

the device. For connecting it to the TV, you have two options—composite or S-Video.

Generally all TVs have Composite inputs and most of the newer ones feature an S-Video input. S-Video offers better picture quality compared to Composite, so

	Supported	Not supported
Audio formats	MP3, AAC	WMA, FLAC, Ogg Vorbis
Video formats	MPEG-1 (AVI, MPG, DAT), MPEG-2 (AVI, VOB), MPEG-4 (AVI, DivX, XviD, ASP Bframes with/without packed bitstream, ASP GMC)	MPEG-4 (ASP with Qpel), WMV
Picture format	JPEG	GIF, BMP, TIF

use it if your TV supports it. The audio is delivered in stereo.

All the functions are accessed using the bundled remote control, so be very careful not to lose or damage it! The on-screen menu is simple to navigate and allows access to all video and audio configurations in the box. Also, for playing back video files, the hard disk you use in this device needs specifically to be on a FAT32 partition. So if you are using a hard disk greater than 20 GB, create a separate FAT32 partition for movies. Note that you can also use the FAT32 partition for data as Windows XP recognizes both FAT32 and NTFS file systems. Power on the device and you will have direct access to all your video and music files. For fine tuning the audio, it offers a seven-band graphic equalizer.

USB OTG*Is there a comparison? The Avox vs a regular DVD player!*

For using the USB OTG function, slide the switch on the device to the "host" position. Plug the USB cable end of your camera (which generally goes into the computer's USB port) into Avox's USB port. Power the device using either of the methods described earlier and you are ready to transfer data.

Performance

The most important aspects here are: how capable it is to play different video and audio formats and the picture quality. Since all televisions have Composite-out, we will use the same. We compared the picture quality against Philips' most popular DivX DVD player—the DVP5106-K.

Though not compatible with all the formats, it covers most of the popularly used formats. We were particularly happy that it smoothly played all our DivX and XviD files. The image quality was very good in spite of using the composite out.

This is a very handy device and does what it promises though we would have liked to see Component-out and multi-channel support.

Pros: Excellent feature-rich device; good format support; very portable; exhaustive set of accessories.

Cons: No Component-out, no multi-channel audio support, non-standard plug point. ■

| Gaurav Seth

*The one-touch backup button on the left**Flaunt it with a cool double-compartment carry case*



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Dinesh Desai

Universal Plug and Play

It's not a genie who plays music on your car stereo from your home PC. A new plug-and-play protocol enables ubiquitous connectivity of this kind

This is the age of multi-tasking. We are expected to be proficient in a spate of activities. Naturally then we want technology also to do the same. The kids want to watch *Lion King* in the den whereas you want to send the Bryan Adams music playlist to your car's MP3 player to listen to on your way to work. Also, mom wants to listen to her ABBA soundtrack in the kitchen. Enter the Universal Plug and Play (UPnP) protocol. UPnP is a peer-to-peer network connectivity protocol that connects wireless and wired devices for file sharing. Using the UPnP protocol for networked audio-visual (AV) devices and a simple user interface similar to that of a TV remote control, you can select what you want to play and where to play it. UPnP AV technology is able to detect media servers and media players (media receivers and adapters) on your local network, display the media content, show where the media can be played and send your choices to the appropriate player.

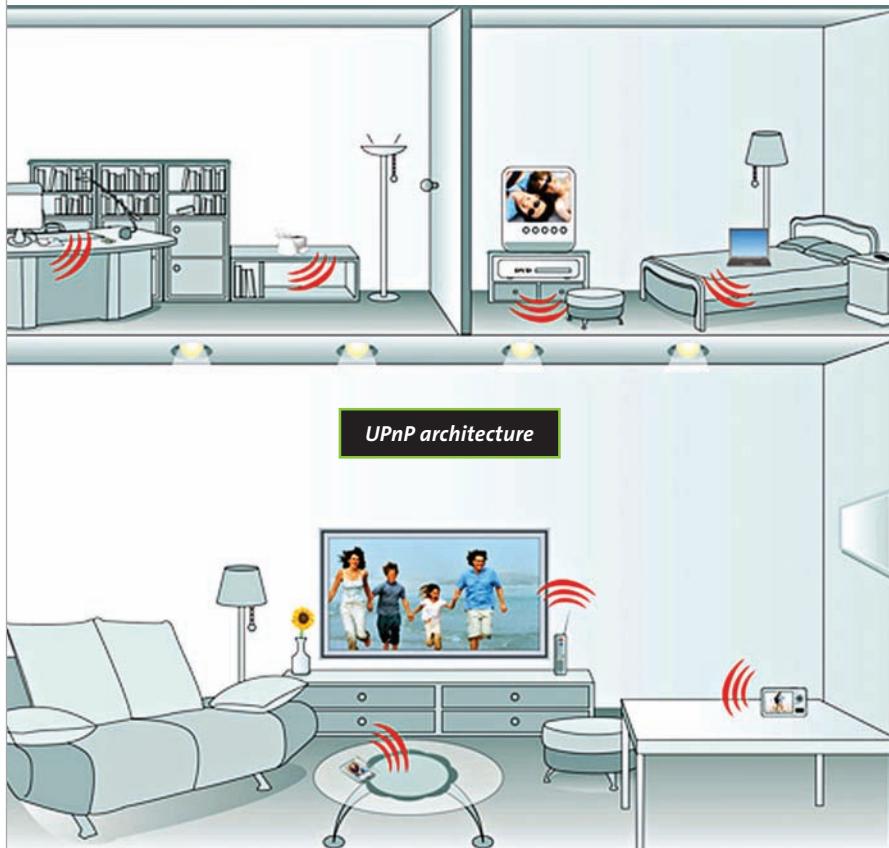
UPnP architecture

The UPnP architecture enables pervasive peer-to-peer network connectivity of intelligent appliances, wireless devices and PCs of all form factors. It is designed to bring easy to use, flexible,

standards-based connectivity to unmanaged networks whether at home, small office, public spaces or to the Internet. UPnP is a distributed, open networking architecture that leverages TCP/IP (Transport Control Protocol/Internet Protocol) and Web technologies to enable seamless proximity networking in addition to data transfer among networked devices at home, in the office or anywhere else.

UPnP is more than just a simple extension of the plug and play peripheral model. It supports zero-configuration, "invisible" networking and automatic discovery for a range of device categories. This means a device can dynamically join a network, obtain an IP address, convey its capabilities and learn about the presence and capabilities of other devices. Finally, a device can leave a network smoothly and automatically without leaving any unwanted state behind.

What is universal about UPnP then? Well, a UPnP architecture doesn't need device drivers; instead, common protocols are used. UPnP networking is media independent and the UPnP protocol can be applied to devices working on any operating system and using any programming language. UPnP does not specify or constrain the design of an API (Application Programmable



Interface) for applications running on control points; OS vendors may create APIs that suit their customers' needs.

The UPnP AV architecture defines the general interaction between UPnP control points and UPnP AV devices. It is independent of any particular device type, content format and transfer protocol. It supports a variety of devices such as television, VCR, CD/DVD player/jukebox, set-top box, stereo system, MP3 player, digital camera, camcorder, electronic picture frame (EPFs), PC and so on. The AV architecture allows devices to support different types of formats for entertainment content (such as MPEG2, MPEG4, JPEG, MP3, Windows Media Architecture (WMA), bitmaps (BMP), NTSC, PAL, ATSC, etc) and multiple types of transfer protocols (such as IEC-61883/IEEE-1394, HTTP GET, RTP, HTTP PUT/POST, TCP/IP, etc).

UPnP Forum

The UPnP Forum is an industry initiative to enable easy and robust connectivity among standalone devices and PCs. The forum seeks to develop standards for describing device protocols and XML-based device schemes for the purpose of enabling device-to-device interoperability in a scalable, networked environment.

The forum has set up working

committees in specific areas of domain expertise. These committees are charged with creating proposed device standards, building sample implementations and appropriate test suites.

Digital home convergence

UPnP was introduced in 1999 and since then the technology has been steadily gaining industry support as the preferred device discovery and control protocol for Internet Protocol networks at home and in offices. Today, the UPnP Forum has over 700 member companies from industries as diverse as PCs, consumer electronics, home automation and control, home security, printing, photography and computer networking. UPnP Forum working groups have developed standards for several kinds of network devices such as cameras, scanners, printers and Internet gateways.

As a result of these efforts, standards-based products in the market are beginning to break barriers between PC and consumer electronic devices and are providing new usage models to consumers. For example, digital media adapters (DMAs) are devices that reside in the entertainment center with outputs to the television and audio equipment and a wired or wireless connection to the home network. DMAs allow the user to view content from the PC located in a corner of the house on the TV

in the entertainment center or on your car stereo.

The advantages of UPnP is such that more and more devices are being used to come up with more innovative working usage models. Consider digital photography. A user will soon be able to take photographs with a digital camera, which can wirelessly upload the pictures to a central storage location at home, making those pictures available for viewing on any device capable of image display. To edit the pictures, the user can access them from his PC. Personal media center devices allow you to carry your pictures wherever you go. Transferring pictures from one device to another is a cakewalk; it is automatically transferred and accessed and all devices have access to the same content at any time.

How UPnP works

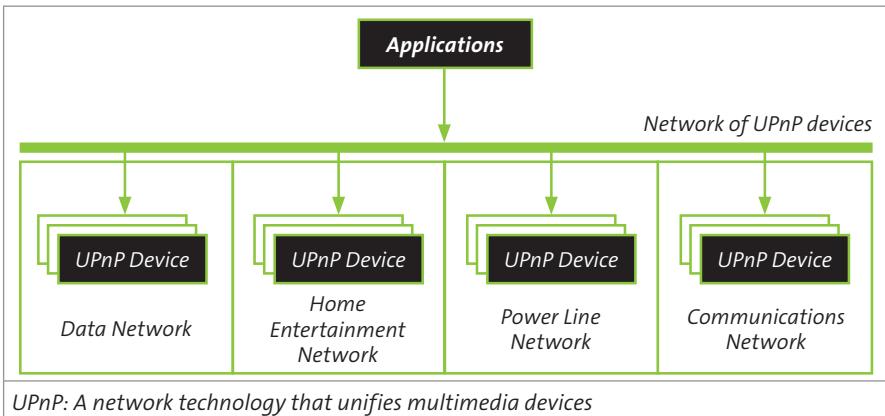
For UPnP to work efficiently, the UPnP device must follow the six steps listed below:

IP addressing

The foundation for UPnP networking is IP addressing. Each device must have a Dynamic Host Configuration Protocol (DHCP) client and search for a DHCP server when first connected to the network by using the IP address assigned to it. If no DHCP server is available (i.e., the network is unmanaged), the device must use Auto IP to get an address. In brief, Auto IP defines how a device intelligently chooses an IP address from a set of reserved addresses, which moves easily between managed and unmanaged networks. If during the DHCP transaction, the device obtains a domain name, for example, through a DNS (Domain Name Service) server or via DNS forwarding, then it should use that name in subsequent network operations; otherwise, it should use its IP address.

Discovery

Given an IP address, the next step in UPnP networking is discovery. When a device is added to the network, the UPnP discovery protocol allows that device to advertise its services to control points on the network. Similarly, when a control point is added to



the network, the UPnP discovery protocol allows that control point to search for devices of interest on the network. The fundamental exchange in both cases is a discovery message containing a few, essential specifics about the device or one of its services, for instance, its type, identifier and a pointer for more detailed information. The UPnP discovery protocol is based on the Simple Service Discovery Protocol (SSDP).

Description

The next step in UPnP networking is description. After a control point has discovered a device, it needs to learn more about its capabilities; to interact with the device, the control point must retrieve the description of the former from the URL provided by the device in the discovery message. The UPnP description for a device is expressed in XML and includes information like the model name and number, serial number, manufacturer's name, URLs of vendor-specific web sites, etc. The description also includes a list of embedded devices or services as well as URLs for control, eventing, and presentation.

Control

After a control point retrieves a description of the device, the control point can send actions to a device's service. To do this, the control point sends a suitable control message to the control URL for the service (provided in the device description). Control messages are also expressed in XML using the Simple Object Access Protocol (SOAP). In response to the control message, the service returns action-specific values.

Eventing

An UPnP description for a service includes a list of actions the service responds to and a list of variables that model the state of the service at run time. The service publishes updates when these variables change and a control point may subscribe to receive this information. The service publishes updates by sending event messages. Event messages contain the names of one or more state variables and the current value of those variables.

These messages are also expressed in XML and formatted using the General Event Notification Architecture (GENA). A special initial event message is sent when a control point first subscribes; this event message contains the names and values of all variables post eventing, and allows the subscriber to initialize its model of the state of the service.

Presentation

The last step in UPnP networking is presentation. If a device has a URL for presentation, then the control point can retrieve a page from this URL, load the page into a browser and depending on the capabilities of the page, allow a user to control the device and/or view device status. The degree to which each of these can be accomplished depends on the specific capabilities of the presentation page and device.

Digital home platform

In addition to entertainment-oriented usage of UPnP technology, companies are working towards bringing devices located on other networks at home into the realm of UPnP devices. Garage door

Acronyms

ARP	Address Resolution Protocol
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name System
FXPP	Flexible XML Processing Profile
GENA	General Event Notification Architecture
HTML	HyperText Markup Language
HTTPMU	HTTP Multicast over UDP
HTTPU	HTTP (unicast) over UDP
ICANN	Internet Corporation for Assigned Names and Numbers
SOAP	Simple Object Access Protocol
SSDP	Simple Service Discovery Protocol
UPC	Universal Product Code
UPnP	UPnP
URL	Uniform Resource Locator
URN	Uniform Resource Name
XML	Extensible Markup Language

openers, lights and switches will soon be available for discovery and control.

The digital home platform will span wired and wireless networks, entertainment devices, telephone equipment, home control and so on, linking the various networks at home into a single logical network of programmable devices as shown in the figure above.

Control points on the network, such as the PC in your room, or the television and remote control in the entertainment area, will have programmatic access to all of the devices on the network and will be able to run programs that aggregate the devices into innovative applications.

Truly connected

Imagine being able to control nearly all your appliances with just a touch of a button. Imagine being able to play your favorite movies on your LCD screen without even inserting a DVD into your DVD player or being able to listen to your favorite music tracks in your car while the files are saved at home in your hard drive. ■

| Faheem Sayed



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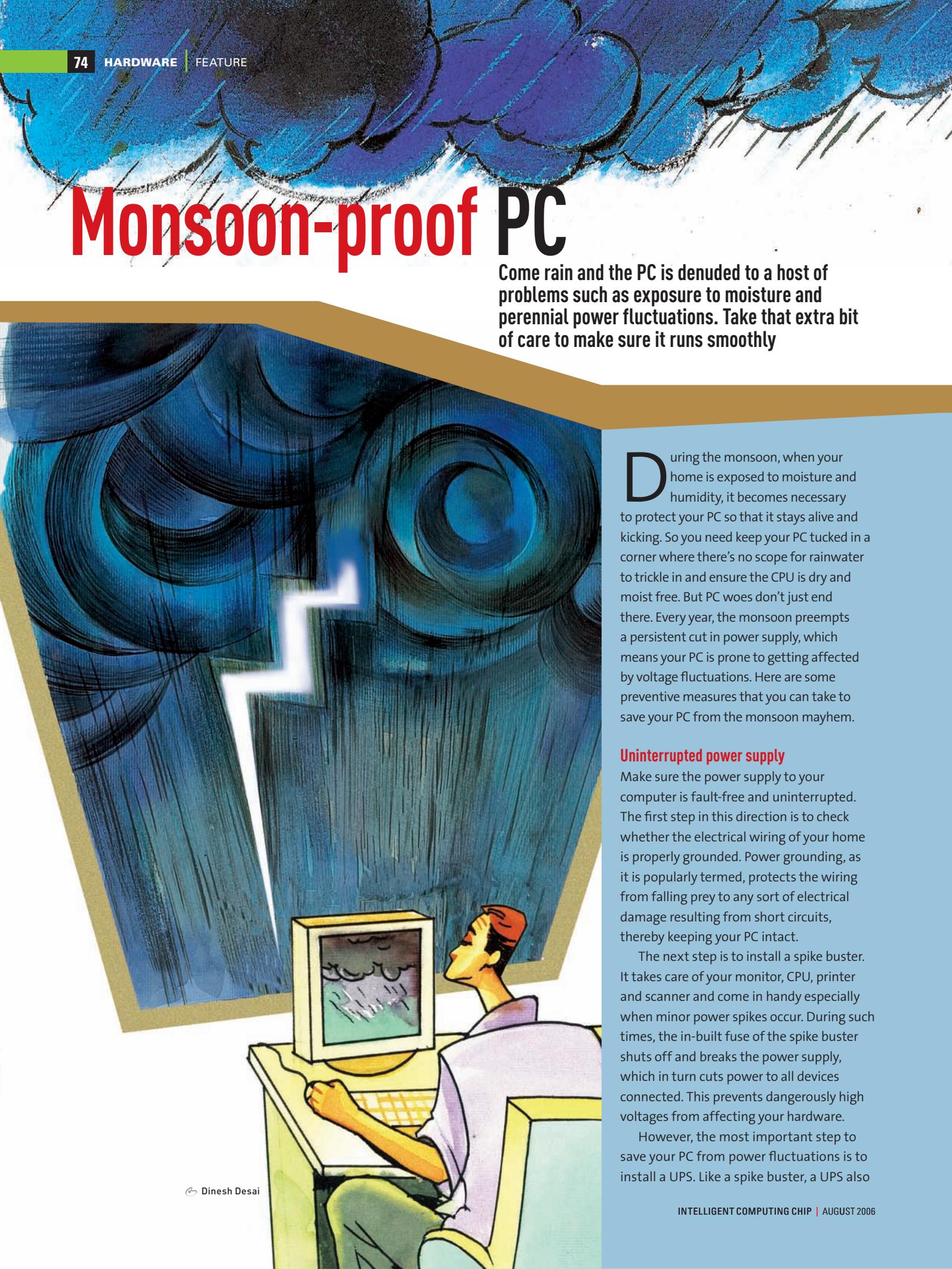
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Monsoon-proof PC

Come rain and the PC is denuded to a host of problems such as exposure to moisture and perennial power fluctuations. Take that extra bit of care to make sure it runs smoothly



During the monsoon, when your home is exposed to moisture and humidity, it becomes necessary to protect your PC so that it stays alive and kicking. So you need keep your PC tucked in a corner where there's no scope for rainwater to trickle in and ensure the CPU is dry and moist free. But PC woes don't just end there. Every year, the monsoon preempts a persistent cut in power supply, which means your PC is prone to getting affected by voltage fluctuations. Here are some preventive measures that you can take to save your PC from the monsoon mayhem.

Uninterrupted power supply

Make sure the power supply to your computer is fault-free and uninterrupted. The first step in this direction is to check whether the electrical wiring of your home is properly grounded. Power grounding, as it is popularly termed, protects the wiring from falling prey to any sort of electrical damage resulting from short circuits, thereby keeping your PC intact.

The next step is to install a spike buster. It takes care of your monitor, CPU, printer and scanner and come in handy especially when minor power spikes occur. During such times, the in-built fuse of the spike buster shuts off and breaks the power supply, which in turn cuts power to all devices connected. This prevents dangerously high voltages from affecting your hardware.

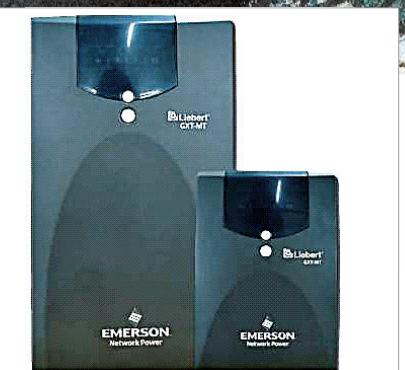
However, the most important step to save your PC from power fluctuations is to install a UPS. Like a spike buster, a UPS also



PC Covers are available in a set of three for the CPU, monitor and keyboard



Silica gel packets can be placed inside the case to soak the moisture



A UPS prevents the system from crashing down during power fluctuations

protects your equipment against power spikes. The difference between the UPS and a spike buster is that the UPS holds an in-built battery along with a fuse. The UPS battery allows your computer to run for some time even after the power goes off. You can utilize the time to complete your work, save files and shut down your computer properly. How long your computer will work depends entirely upon the capacity of the battery and the load on the UPS. You will get more time to work without power if only the monitor and CPU are connected to the UPS, so stay away from connecting speakers, printers and scanners to the UPS.

Raincoat for your PC

Moisture in the air leads to rusting of the computer case and hardware. The rust reduces the performance of the hardware and sometimes might even lead to crash. It also adversely affects components like capacitors in the monitor and motherboard. To prevent this from happening, keep your computer covered when not in use. During monsoon, your PC is prone to becoming a hub of moist dust. If you don't have the time

to clean your PC regularly, then use a cover. These covers are available in a set of three; one each for the monitor, CPU and keyboard.

Keeping the CPU dry

During the rain, take proactive steps to open the case at regular intervals, use a lighted bulb to heat the space within the CPU so that it remains dry. Just make sure your computer is turned off while you are using the bulb. This will help in preventing moisture from accumulating on the motherboard, RAM or on the cables within. You can even use silica gel to prevent moisture buildup. It is available in sealed packets that contain granules of this desiccant. These granules are capable of soaking the moisture from the air circulating within the case. Once the granules change their color, you know that the gel is completely saturated. But as these packets are reusable, you can heat them and replace them in the CPU.

One thing you should never do to clean the dust and moisture from the CPU, keyboard or monitor is use vacuum cleaner or hair/hand dryer. These devices create static electricity and can affect the

motherboard and graphics card in the computer.

How power grounding works

- Power ground is a typical electrical circuit, which allows additional flow of electricity to pass into the ground.
- Appliances have limited capacity to handle electrical energy, excess of which electrifies the body of the appliance or can even blow off the main fuse.
- To prevent charges from leaking into the body, a third prong of the plug is connected to the third socket, which is in turn connected to the ground.
- The excess electricity passes through the third prong and moves straight to the ground where it is absorbed. This way during a short circuit, you and your appliances are saved from electrocution and your equipment remains intact. ■

| Pradosh Mitra

Product	Company name & contact person	Phone number & e-mail	Brands of UPS
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Silica Gel	Safepack Industries Ltd (Rajesh Patil)	(020) 27110800 rpatil@safepack.com	Microtek
Computer Cover	Shivshakti Traders (Raja Gupta)	(022) 24940257 /24930009 shivshaktitraders@vsnl.net	Tata Libert Powersafe

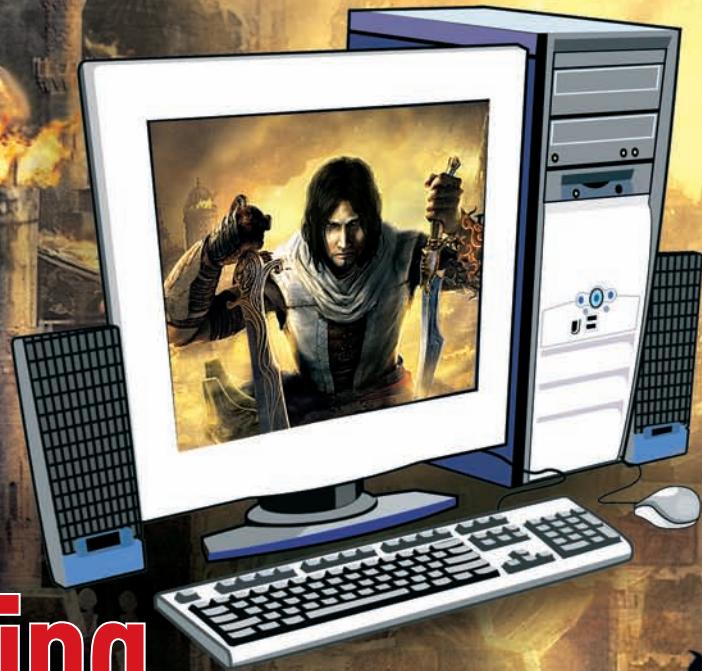
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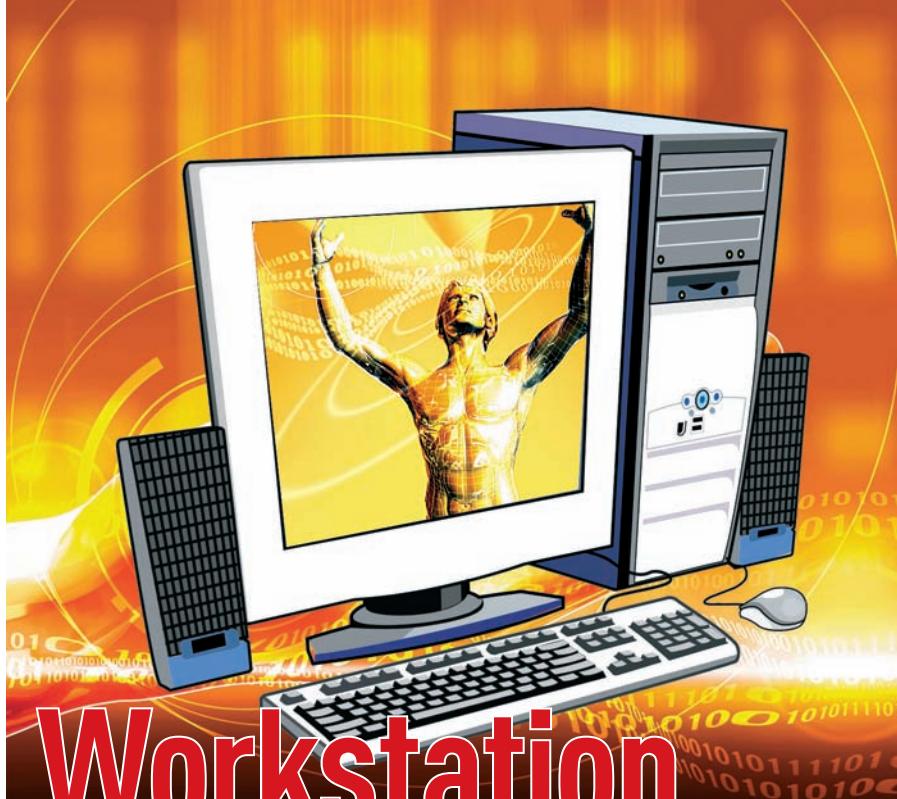


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No matter what your budget, arm yourself with these configurations for firepower to enjoy your favorite games

CATEGORY	ENTRY-LEVEL	PRICE (Rs)	MID RANGE	PRICE (Rs)
Processor	AMD Athlon 64 3000+ processor (Socket 939)	4,800	AMD Athlon 64 3500+ processor (Socket 939)	6,550
Motherboard	Foxconn NF4XK8MC-RS (Nvidia nForce4)	3,000	Asus A8N-E (Nvidia nForce4 Ultra)	5,650
RAM	Transcend 512 MB DDR 400 (2.5-3-3-8)	2,250	Transcend DDR 400 512x2 MB (2.5-3-3-8)	4,400
Hard Disk	Seagate 160 GB Barracuda (SATA)	3,400	Hitachi Deskstar T7K250 (250 GB)	5,650
Graphics Card	Forsa 7600GS (PCI Express x16) 256 MB	6,700	MSI 7600GT NX7600GT-T2D256E 256 MB	11,250
Optical Drive	Lite-On SHW-1635S Dual Layer DVD writer	2,350	Lite-On SHW-1635S Dual Layer DVD writer	2,350
Network Card	Onboard LAN (10/100)	Nil	Onboard Gigabit LAN	Nil
Monitor LCD	Samsung SyncMaster 740N LCD monitor (8ms response time)	11,250	Samsung SyncMaster 740N LCD monitor (8ms response time)	11,250
Monitor CRT	Samsung 793S CRT Non-Flat	5,000	—	—
Keyboard	Microsoft keyboard and optical mouse set	800	Microsoft keyboard and optical mouse set	800
Mouse	—	Nil	—	Nil
Speakers 2.1	Logitech X-230	3,300	Altec Lansing MX5021	7,100
Speakers 5.1	Logitech X-530	5,900	Logitech THX Z-5300e	11,000
Soundcard	Onboard (6 channel)	Nil	Creative 24-Bit Live! 7.1 Channel	1,700
Case	Zebronics Antibiotic	2,100	Gigabyte Triton	3,000
PSU	PowerSafe 400 Watts	1,500	Powersafe 400 Watts	1,500
External HDD (optional)	40 GB 2.5-inch Seagate Momentus HDD (Rs 3,000) + Generic External Casing (Rs 300)	3,300	40 GB Seagate Momentus HDD 2.5-inch (Rs 3,000) + Vantec Nexstar3 Enclosure (Rs 1,000)	4,300

Disclaimer: We've mentioned the lowest street prices here. These prices are indicative and subject to change.

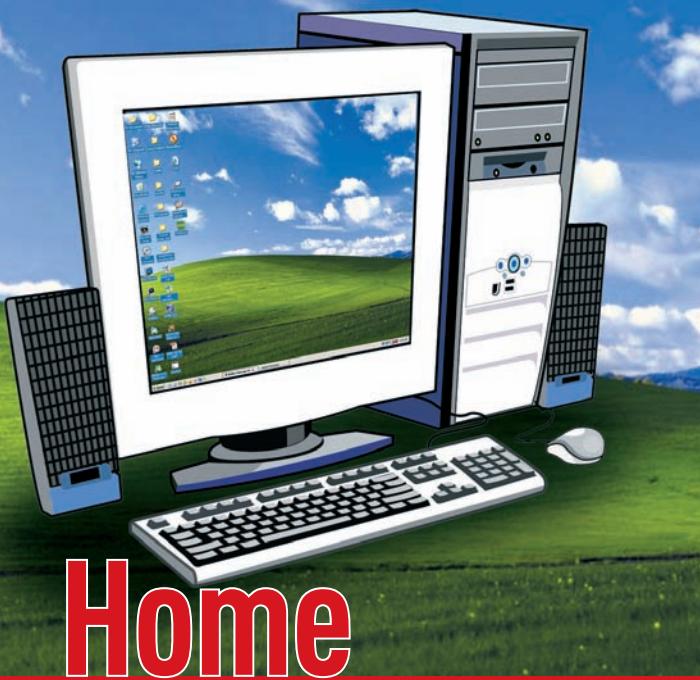


Workstation

No animation or imaging application is too strenuous for this configuration

HIGH END	PRICE (Rs)
AMD Athlon X2 4200+ (Socket 939)	19,500
DFI - LANPARTY nF4 SLI-DR (nForce4 SLI)	14,000
Corsair XMS 2GB (2x1 GB) DDR 400 Dual Channel Kit System, Model: Twinx2048-3200c2pt (2-3-3-6)	13,000
Western Digital Raptor X WD1500AHFD 150 GB 10,000 rpm 16 MB Cache Serial ATA150 (two in RAID 0) (Rs 14,000x2)	28,000
Leadtek WinFast PX7950 GX2 TDH, 1 GB DDR3	34,000
Lite-On SHM-165H6S LightScribe Dual Layer DVD writer	3,750
Onboard Dual Gigabit LAN	Nil
Dell 2407WFP 24-inch UltraSharp Widescreen Flat Panel LCD monitor	43,691
—	
Logitech G15 gaming keyboard	4,850
Logitech G5 Laser gaming mouse	3,850
Klipsch Promedia GMX A-2.1	11,150
Logitech Z-5500 5.1 505 Watt speakers	23,000
Creative Sound Blaster X-Fi XtremeMusic	9,200
Antec Performance P180 Silver	9,950
NeoHE 550 Watts	8,522
—	
Western Digital Passport 80GB	5,500

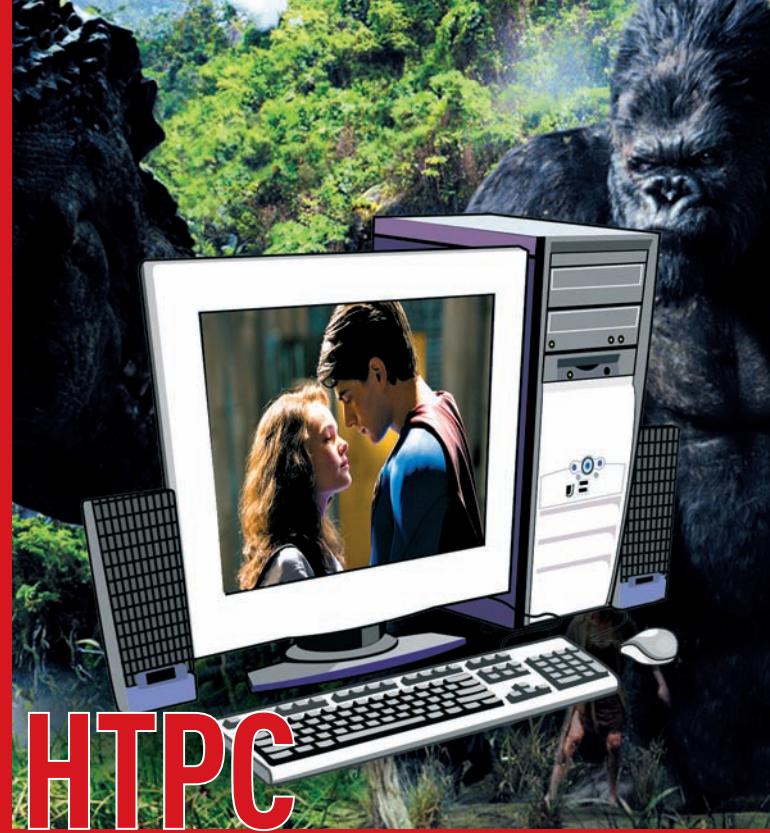
CATEGORY	LOW END	PRICE (Rs)
Processor	AMD Opteron 170 2.0 GHz Dual Core	21,200
Motherboard	ASUS A8N-SLI Premium (nForce4 SLI)	9,700
RAM	Corsair XMS 2 GB (2x1 GB) DDR 400 Dual Channel Kit System, Model: Twinx2048-3200c2pt (2-3-3-6) (Rs 5650x2)	13,000
Hard Disk	Hitachi Deskstar T7K250 (250 GB) (Two in raid 1)	11,300
Graphics Card	Leadtek Quadro FX 540 PCI-E 128 MB with TV-Out	9,750
Optical Drive	Lite-On SHW-1635S Dual Layer DVD writer	2,350
Network Card	Onboard Dual Gigabit LAN	Nil
Monitor	Samsung SyncMaster 740N LCD monitor (8ms response time)	11,250
Keyboard	Microsoft keyboard and optical mouse set	800
Mouse	—	
Case	VIP ZB-01	3,800
PSU	Antec Neo HE 550 Watts	8,522
External Hard Disk (optional)	Western Digital Passport 80 GB	5,500



Home

This is your no-frills, wallet-friendly configuration for basic home computing

HOME	PRODUCT	PRICE (Rs)
Processor	AMD Sempron 64 2600+ (Socket 754)	2,500
Motherboard	Asus K8V-MX (VIA K8M800)	2,550
RAM	Transcend 512 MB DDR 400 (2.5-3-3-8)	2,250
Hard Disk	80 GB Seagate Barracuda SATA	2,450
Graphics Card	Onboard	Nil
Optical Drive	Lite-On SHW-1635S Dual Layer DVD writer	2,350
Network Card	Onboard 10/100 LAN	Nil
Monitor LCD	Samsung SyncMaster 740N LCD monitor (8ms response time)	11,250
OR Monitor CRT	Samsung 793S CRT (Non-Flat)	5,000
Keyboard	Microsoft keyboard and optical mouse set	800
Mouse	—	
Speakers 2.1	Creative SBS370	1,250
OR Speakers 5.1	—	
Soundcard	Onboard audio (6 channel)	
Case	VIP 711B & 300 Watts VIP PSU	1,300
PSU	Bundled with case	



HTPC

If it's home theater you crave, this system will deliver serious thrills

HTPC	PRODUCT	PRICE (Rs)
Processor	AMD Athlon 643500+ processor (Socket 939)	6,550
Motherboard	Foxconn 6150K8MD-EKRSH (Nvidia GeForce 6150)	3,950
RAM	Transcend DDR 400 512x2 MB (2.5-3-3-8)	4,400
Hard Disk	Hitachi Deskstar T7K250 (250 GB)	5,650
Graphics Card	Onboard	
Optical Drive	Lite-On SHW-1635S Dual Layer DVD writer	2,350
Network Card	Onboard Gigabit LAN	Nil
LCD 17-inch	Samsung SyncMaster 740N LCD Monitor (8ms response time)	11,250
OR LCD 24-inch	Dell 2407WFP 24-inch UltraSharp Widescreen Flat Panel LCD monitor	43,691
Keyboard	Logitech Cordless Desktop EX111 (wireless optical mouse & wireless RF keyboard)	2,500
Mouse	—	
Speakers 2.1	(For home theater experience, we recommend only a 5.1 setup)	
OR Speakers 5.1	Logitech THX Z-5300e	11,000
Soundcard	Creative 24bit Live! 7.1 Channel	1,700
Case	Cooler Master Media 260	9,000
PSU	Powersafe 400 Watts	1,500
TV Tuner Card	Compro VideoMate Gold Plus II	3,500

Infotainment in the skies

Long commutes, whether by rail, air or bus, can get quite monotonous. I often wonder how I'd survive such long journeys, just sitting or standing and doing nothing else. While newspapers and magazines do help, I long for some entertainment. Observing fellow travelers, I am pleasantly satisfied to see that many of them use technology to while away the hours. The airlines have been offering hi-tech entertainment systems for many years.

The entertainment systems on international flights really catches my fancy. I experienced the personal entertainment systems on Singapore Airlines and Emirates. Both airlines have audio video on demand (AVOD) systems. Kingfisher Airlines also offers something similar.

An in-flight personal entertainment system comprises an LCD screen fitted behind the seat headrest. Headphones and a hand-held controller (similar to the TV remote) complete the system. The three aforementioned airlines offer personal LCD screens for every passenger (in all classes).

Then there's the content. I was amazed at the choice, especially on KrisWorld, the entertainment system from Singapore Airlines.

Fiddling with the remote and watching responses on the little screen in front of me, I quickly learnt to navigate through the options in the KrisWorld menu. KrisWorld now offers an exhaustive 500 entertainment options. The Wiseman3000 AVOD system lets you start a movie or TV program whenever you like. Play, pause, fast-forward and rewind a program at your convenience. It is just like using a DVD player! KrisWorld offers 60 movies and over 100 TV programs.

Now switch to audio. With a choice of 220

music CDs, why bother carrying the iPod along? Audio Books are also available for selection, with non-fiction books as well as some popular classics.

In addition, there are 12 broadcast audio channels ranging from classical, dance and contemporary pop music to new age and jazz. Specially tailored channels, featuring music in other languages, are available on selected flights.

Next, comes gaming. What's your type? Serious board games or brain teasers? A selection of Nintendo Game Boy games, including popular titles like *Pokémon* and *Mario Bros* are on the menu. The new trend is multi-player network PC games that enable passengers to play video games wherever they are seated. Some of these games include *Who Wants to be a Millionaire?*, *Head-to-Head Chess* and *Mahjong*.

You can also access flight path details and destination info. A moving map, supported by satellite navigation, shows your exact position.

To help you keep up with world events, there's a text-based news channel, offering news ranging from business to sports to weather. On certain long-haul routes, Singapore Airlines offers live TV for popular news channels.

Wireless broadband Internet access is the latest service that airlines are offering. That's right, the cabin becomes a hotspot and you can surf the Net, send e-mail, chat, log in to your company network via a VPN or even make Skype calls from your notebook. In-flight mobile telephony and SMS will be available soon.

With these kind of systems and the exhaustive choice of content, flights suddenly seem shorter.

The writer has been tracking personal technology for the past 12 years



Brian Pereira
brian.pereira@chip-india.com

Wireless broadband Internet access is the latest service that airlines are offering. The cabin becomes a hotspot; you can surf the Net, send e-mail or even make Skype calls from your notebook



Courtesy: Kingfisher Airlines
Long flights now seem shorter thanks to options like gaming, news, music, movies and also live TV



Courtesy: Singapore Airlines
With so many personal entertainment options, kids are no longer bored

MP3 Compression

An MP3 CD contains more than a hundred songs while an audio CD holds around fifteen. Find out how MP3 compression works

1 Uncompressed audio

The audio stream of an audio CD stores more data than your brain can actually perceive. For example, if two similar notes are played simultaneously, your brain can perceive only one of them. If two sounds are different but one is louder than the other, your brain may never perceive the quieter signal. This effect is called "Masking". Humans cannot hear frequencies below 20 Hz or above 20 KHz. While hearing capacities vary among individuals, humans perceive midrange

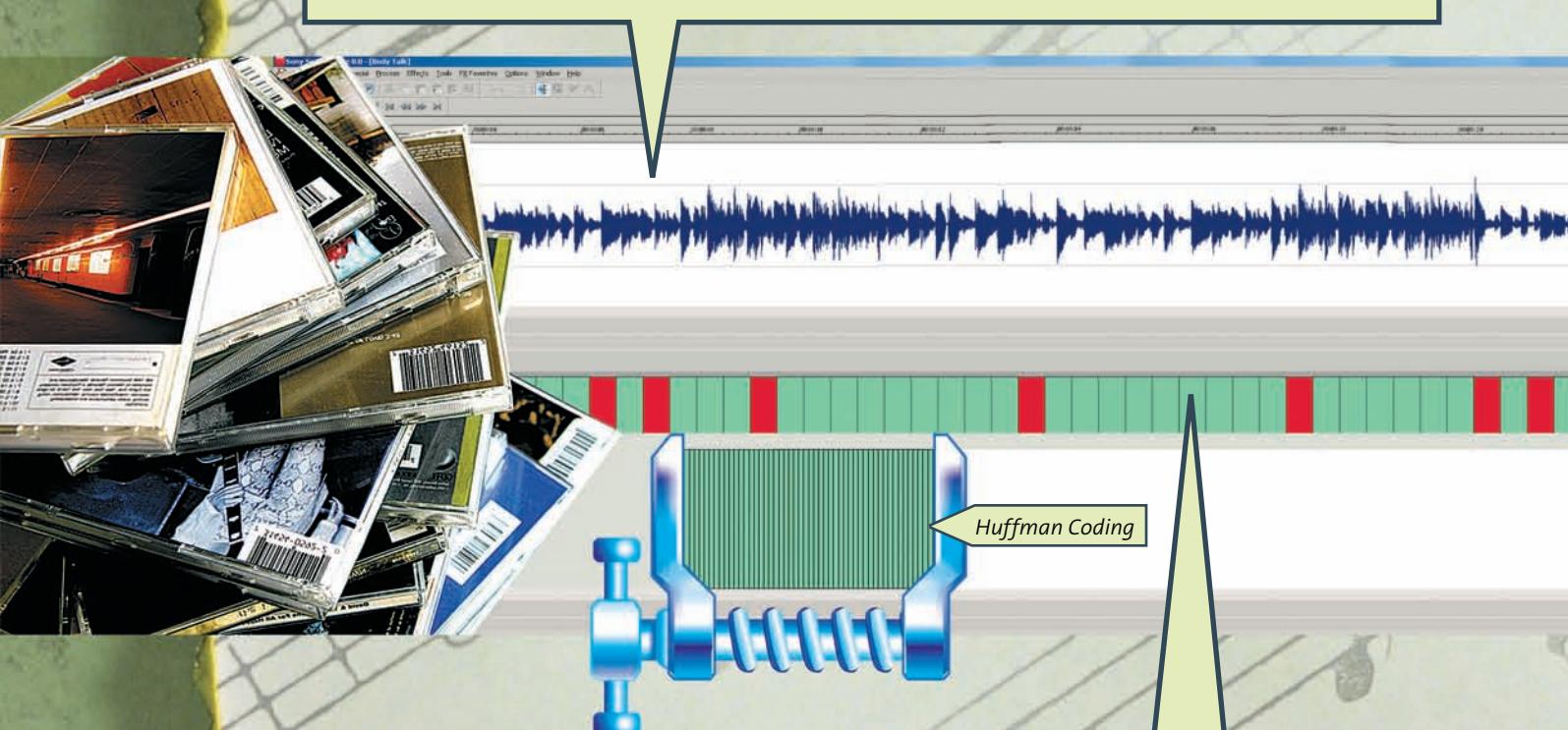
frequencies more strongly than high and low frequencies. These are simple and well-established empirical observations on the human hearing mechanism. The study of this auditory phenomenon is called "psychoacoustics". The human hearing patterns have been researched so intricately that the entire process has been translated into mathematical models and can be represented in tables and charts. These reference tables and charts are built into the MP3 codec.

3 Dropping redundant frequencies

The audio frequency for each frame is compared to the mathematical models of psychoacoustics which are stored as reference tables in the MP3 codec. From these reference tables, it can be determined which frequencies need to be rendered accurately, since they'll be perceptible to humans. In addition to this, the codec also decides which frequencies need to be

dropped or allocated fewer bits, since we wouldn't be able to hear them anyway.

The codec takes the bitrate into consideration as it writes each frame to the bitstream. If the bitrate is low, the redundancy criteria will be measured strictly, resulting in a lower-quality output as greater number of frequencies is dropped. If the bitrate is high, the codec will be lenient, and the end result will sound better.

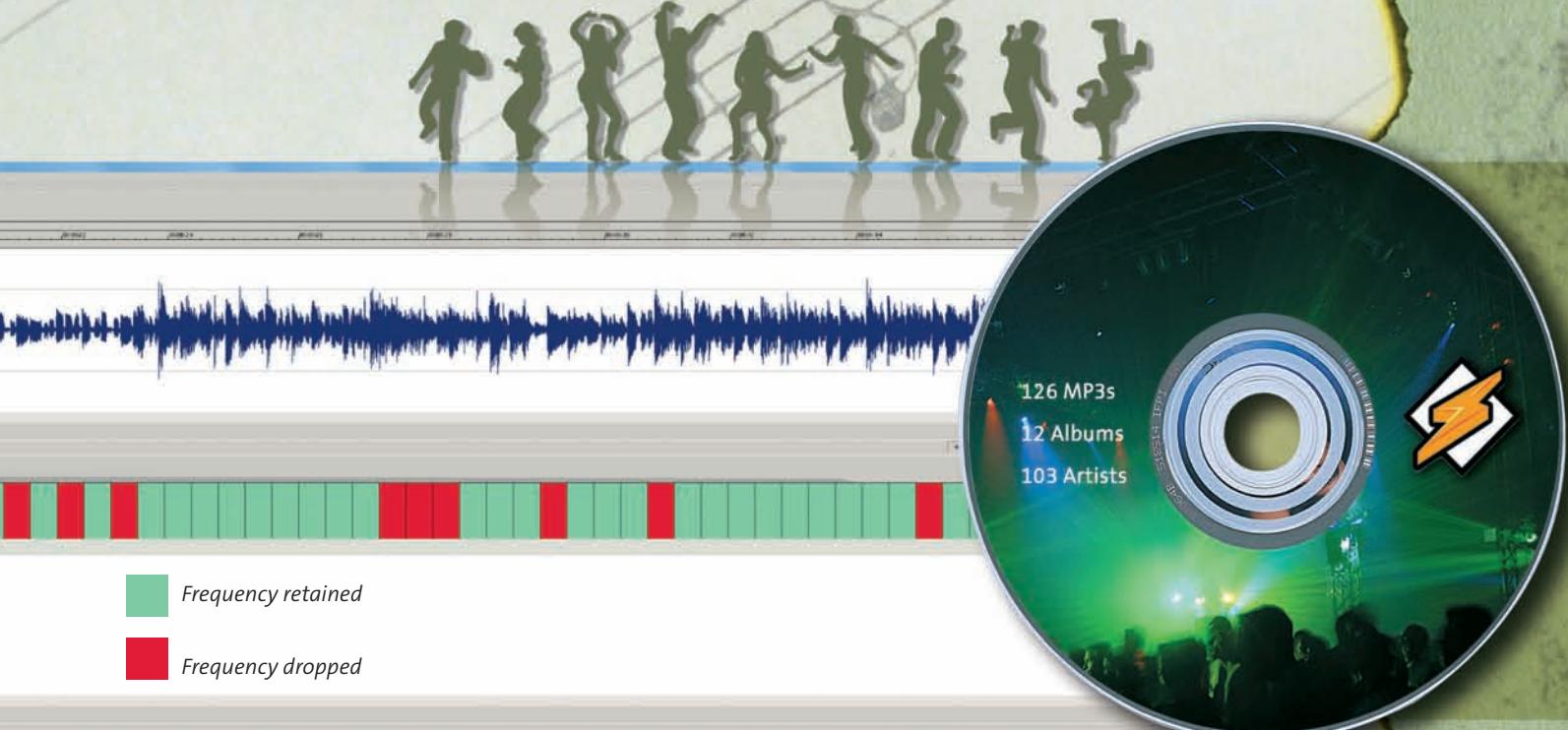


2 Frames and bitrate

When you click on the “Rip” or “Grab” button after inserting an audio disc into your optical drive, the audio signals are broken into fragments called “frames”, each of which last typically for a fraction of a second. You can think of frames similar to those present in a film strip. But here, it refers to sound.

Next, the encoder calculates the number of bits to be distributed to best account for the audio stream to be encoded. The reason being, the different portions of the frequency spectrum are encoded most efficiently using slight variants of the same encoding algorithm for optimal results.

Before moving on to compression, the MP3 codec takes into consideration the encoding bitrate specified by the user. This step determines how much of the available audio data will be stored, and how much will be dropped. Bitrate refers to the number of bits which are played per second. It is comparable to the resolution of an image—the higher the resolution, the better the quality of the image. Similarly, in an MP3 file, it is the bitrate which determines the audio resolution—the higher the bitrate, the greater the audio resolution. While you cannot control the degree of loss, you can control the number of bits per second to be devoted to data storage, which has a similar net result.



4 Final compression

The serial bitstream of frames is run through the process of “Huffman Coding”, which compresses the information throughout the sample. The Huffman coding does not work with the psychoacoustic

model, but achieves additional compression. Thus, the entire process of MP3 encoding is a two-pass system: First, the redundant data is discarded and then the relevant data is further shrunk, resulting in an audio file that is 10 times smaller!

| Anand Tuliani

Cell Phone Cravings

A guide to buying the perfect cell phone suiting all your needs

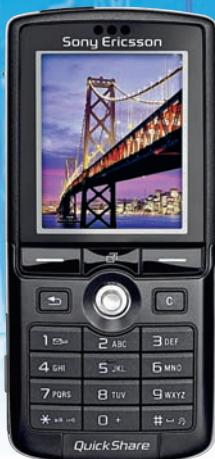
Basic



Models: Nokia 1108, Nokia 3120, Motorola RadioMoto C168

Budget: Rs 2,500 to Rs 5,500

Multimedia



Models: Sony Ericsson W800i, Motorola motoRAZR V3i, Nokia N91

Budget: Rs 8,500 to Rs 35,000

Smart phone



Models: Nokia 6708, O₂ Atom, Palm Treo 650

Budget: Rs 20,000 to Rs 50,000

The primary functions of a cell phone are voice communication and text messaging. You don't need anything more than a basic cell phone to keep in touch with family and friends. There are several models available in the market that are targeted towards basic users or people who are tight on budget. If you want a phone strictly to communicate, ignore color display and other fancy features. A vanilla phone with a backlit dot matrix display will serve all your needs. However, the bonus comes in form of a few games, reminder, alarm clock, calendar and perhaps a stop-watch. For a phone with a color display, you'll need to stretch your budget by around Rs 700.

When buying a cell phone, keep in mind that it should be as light as possible so that it's easy to carry around. Pay close attention to build quality and ergonomics. The quality of the body, battery cover and keypad should be good. Also note that the size of the keys should be big enough making it easy to dial numbers or type text messages. Finally, ensure the battery life is good for longer talk time.

Phones belonging to this category are feature-rich and come packed with either a built-in camera or a music player or both, serving your entertainment needs while you're on the move. Buy a multimedia phone only if you're going to use its features since you'll be paying more than double the amount than you would for a basic phone.

Before buying one, you need to select the phone with the right kind of feature set suiting your application areas while also fitting in your budget. If you're a shutterbug, phones with a high-resolution camera with flash and auto-focus will make you drool. And if you're a music lover, you'd want a phone with a good music player coupled with playlist management. A 3.5 mm earphone jack will enable you to use any earphone with your phone. Important features to look out for in multimedia phones are good screen size, memory expandability, Bluetooth, IR, and audio and video quality.

A plethora of multimedia phones are available. Entry-level multimedia phones are not the trusted ones as they lack in performance. So if you want to buy a good multimedia phone, be ready to spend.

Smart phones combine the features of a multimedia phone and a personal digital assistant (PDA). More than entertainment, such phones are meant for people who need the features of a PC on the go. A good smart phone features office suite that includes applications like word processor, spreadsheet and presentation tool. In addition to this, it also features a multimedia player, image editor, web browser and e-mail client. A key feature of a smart phone is that additional applications can be installed on the device to increase its functionality.

Since a smart phone is a heavy investment, selecting the right one is a crucial decision. Choose the type of OS that you are most comfortable with. If you want to stick to Windows, opt for a smart phone based on Windows Mobile. Other operating systems are Symbian UIQ, Palm OS and Linux. If you frequently access the Internet wirelessly, look out for a phone with support for Wi-Fi. A built-in QWERTY keypad comes handy for typing messages on a document instead of using a stylus. Finally, consider the screen size and battery life—the greater, the better! ■

| Anand Tuliani



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 - ◆ Plasma/LCD Panels
 - ◆ Front and Rear Projection Systems
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 - ◆ AV Receivers/Amplifiers
 - ◆ DVD Players/Recorders
 - ◆ SACD/DVD-Audio Players
 - ◆ MP3 Players
 - ◆ Loudspeakers
 - ◆ Home-Theatre in a Box Systems
 - ◆ Portable Audio/Video
 - ◆ Car Audio
 - ◆ Multimedia Speakers
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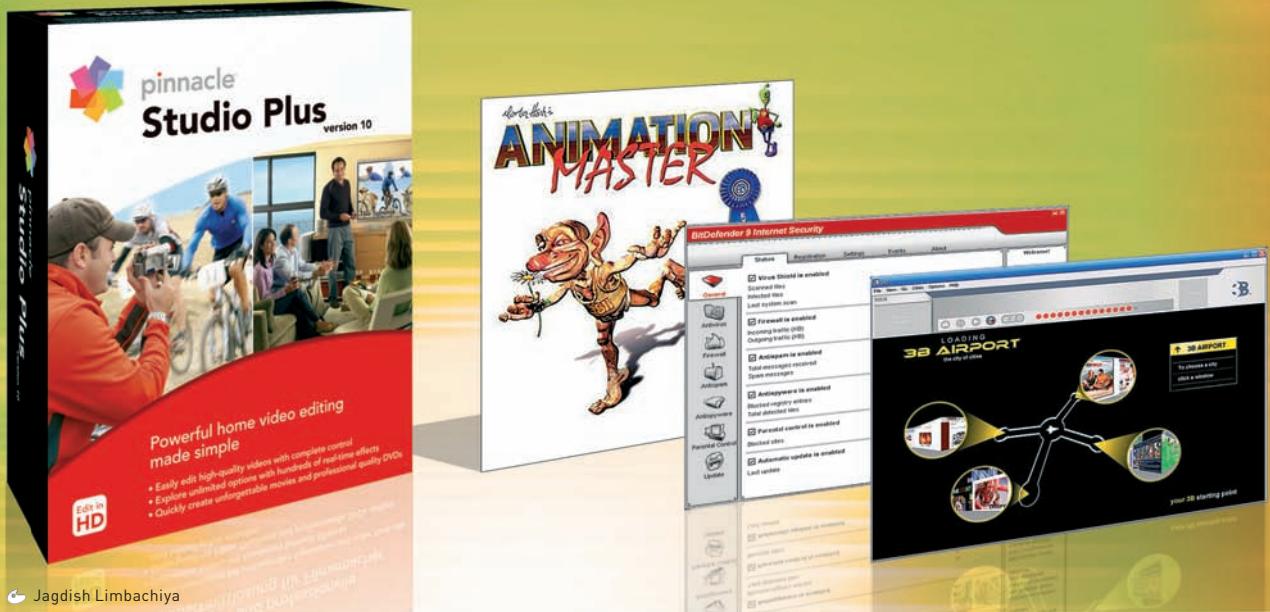
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Software Center

This month the software center has lined up some exciting software for you. We kick off the reviews with Pinnacle Studio 10 Plus; a very good and easy-to-use video editing software, it includes lots of real-time and transition effects powered by the Liquid engine. Those of you who are in the animation field or plan to pursue the same should check out Animation Master 2006. With its low price and advanced features, it is sure to give the other animation software a run for their money. Next in line is the GOM player. It supports almost all file extensions available today and above all, it is free. It even allows you to add various effects to your videos. Also, check out how the new version of Ashampoo Burning Studio fares in comparison to Nero.

| The Ratings Explained

The parameters used for evaluating software are assigned a graphical rating out of a scale of 5. These measures include performance, features and ease of use. The overall rating shown in the reviews is based on all these factors.

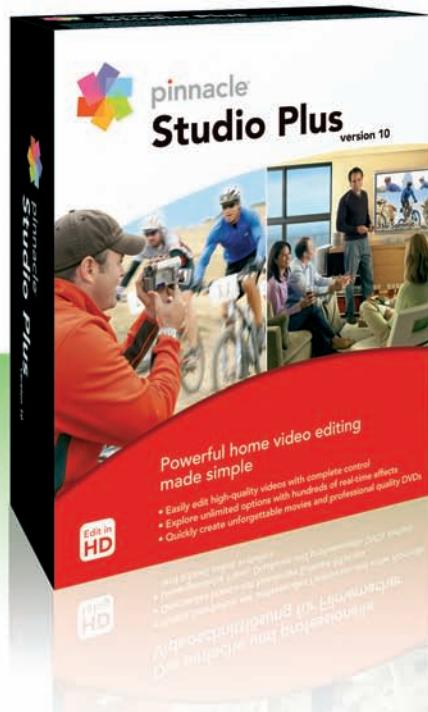
In addition, there is a value for money rating for each application. This rating is obtained

If you're troubled by frequent hard disk crashes, the Hard Disk Inspector is a must as it warns you when your hard disk is about to crash. The NOD32 Anti-virus is not heavy on your system unlike other anti-virus applications. So there will be sufficient resources to allow other applications to run smoothly.

If you like the idea of browsing web sites in 3D, then 3B browser is the one. It creates 3D galleries of your favorite web sites. Last in the list, the Bitdefender 9 Internet Security app has five modules including Anti-virus, Anti-spam, Firewall, Anti-spyware and Parental Control which ensure that your PC stays safe round the clock.

So what are you waiting for? Go ahead and dig right in.

by compiling the features and the utility of the application against its price. In case of freeware and shareware tools available for downloading from the Internet, we replace the price with the download size (and therefore, the time taken to download the application) for arriving at the value for money rating.



Video extravaganza

The latest version of Pinnacle Studio provides the easiest and the most powerful way to quickly combine and enhance your precious memories and effortlessly preserve and share them on DVD and beyond. With very good usability and some compelling features it will definitely prove to be a hit with a majority of home users.

The application has a clutter-free, three-window interface, which is very intuitive. It makes learning and using Studio a child's play. This version includes hundreds of standard as well as bonus real-time effects and transitions powered by the Liquid Edition engine. With the help of these, you can control the characteristics and parameters of an effect on a frame-by-frame basis. It even allows you to preview these effects on the fly, at the highest resolution on your primary or even secondary computer monitor. Transitions include a wide array of effects like dissolves and wipes, with optional theme packs for weddings and sporting events. It also includes additional corrective filters, with fun artistic effects like old film, earthquake, lens flare and lightning that provide great accents for home movies. You can also purchase extra packs of effects in case you get bored with the existing ones.

Studio also features fully integrated CD and DVD authoring workflow which allows you to easily create DVDs with motion menus and custom navigation on the fly for playback on most DVD players or PCs with DVD drive. You can also preview your results right from your editing workspace. And for the times when you want to quickly archive your treasured memories on DVD, Pinnacle Studio provides a quick and easy tool for instantly transferring your video tapes to DVDs without the extra time-consuming step of copying your files on to your hard drive. It allows you to create extraordinary real-time multi-track editing and effects that you see on TV everyday like chroma key (green or blue screen) and picture-in-picture (PIP). The chroma Key effect gives you the power to insert the star of your video against any real (or surreal!) background, while the PIP effect lets you place one video inside another in real time. It even features an additional audio and video track for chroma key and picture-in-picture effects. With the dedicated title track and two additional audio tracks for background music and narration, Studio offers three video design layers and four audio tracks.

Studio's still-image pan-and-zoom capabilities are flexible and intuitive. The

Video Editing

Pinnacle Studio Plus 10

System requirements: Windows XP, 2.4 GHz or faster processor, 1 GB RAM, graphics card with 256 MB or more RAM, 3 GB of free hard disk space, DVD drive

Price \$69.99 (Approx Rs 3,200)

Contact Pinnacle

Website www.pinnaclesys.com

RATINGS

Ease of use	<input checked="" type="checkbox"/>				
Features	<input checked="" type="checkbox"/>				
Performance	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Overall Rating	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Value for money	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Find it on CHIP  CD

audio features, which include a real-time audio mixer and SmartSound background music creation are also to reckon with.

You can now capture video from the latest cameras, handycams and even cell phones. Thanks to the power of the professional Liquid Effects Engine, you can now actually edit with real-time effects and transitions in truly stunning high-quality HD. However, we would like to point out that the Liquid engine has also increased the RAM consumption of this application; in order to take the full advantage of this software, you will need to have at least 1 GB of RAM. Also, if you are planning to capture and edit HD video, we recommend you use a graphics card with at least 256 MB of dedicated RAM in addition to the 1 GB of system RAM. This will ensure that there are no bottlenecks when you are using this application.

The high system requirements aside, Pinnacle Studio 10 is a very good video editing application. With features that will appease not only novices but also advanced users, we recommend you give it a shot.

For: Ease of use; clutter-free interface; allows you to preview the transition effects on the fly.

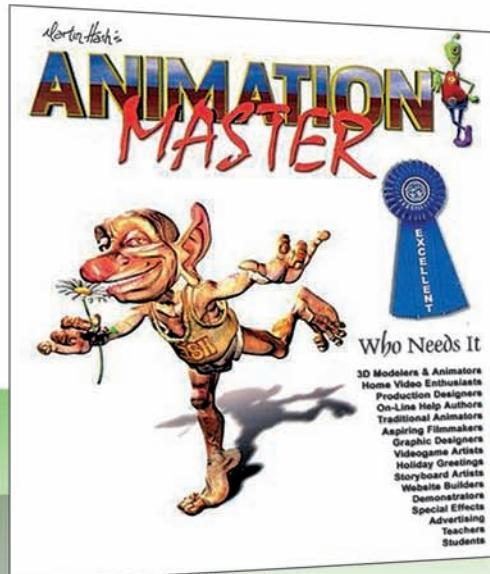
Against: High system requirements.

Animation

Animation Master 2006

System requirements: Windows (all versions), Mac OS 9/OS X, 600 MHz of faster processor, 128 or more RAM, CD/DVD-ROM drive.

Price	Rs 14,000
Contact	Aladdin Multimedia Pvt Ltd
Phone	022-66936795
Website	www.hash.com
RATINGS	
Ease of use	█ □
Features	█ □
Performance	█ □
Overall Rating	█ □
Value for money	█ □



Telling toon tales

Animation Master includes everything you need to create powerful computer graphics including complete sculpting features, powerful animation tools and superb rendering.

The installation is quick and you simply need to follow the on-screen commands. Any work you do on this software is project based. It contains all models, actions and scenes of the animations you create. You can store your models, actions, etc in separate files that the project references or within the project file itself. This provides a convenient way to consolidate your data and share it with other animators. As you would agree, images are an integral part of computer animation. With the help of this application, you can work with them with ease. It even allows you to interact with image manipulation programs from Adobe and Corel. The image formats supported by this application are BMP, IFF/LBM, JPEG, PCX, TGA, TIFF. For animations, the application supports the AVI and MOV file extensions. They can be used for decals, projection maps, layers, fog images and light gels.

Dialog and lip-sync are also important to character animation. Animation Master allows you to import your sound files and sync them with the actions of your

characters. Sounds are imported as audio sample files that can be loaded and placed wherever you want to create lip syncs. It even allows you to load sampled music as time reference when animating to a song. Animation Master supports standard, uncompressed PCM WAV files. As long as the uncompressed PCM format is used, audio files of any frequency can be used, regardless of whether they are stereo or mono.

The Post Effects option allows you to modify the output of a camera or image objects. A Tint post effect can be used to make your renderings black and white. If used by a camera, the effects are applied when a choreography is rendered from the camera point of view. To use a Post Effect, just drag the ones you want on the image you want to adjust. A Post Effect Container will appear with the effects listed in the order that they will be applied. If you wish to use a sequence of Post Effects on more than one object, you can create a new Post Effect by right-clicking on the Post Effect Container in the Project Workspace tree and choosing the "New Post Effect". You can then add a series of these effects by right clicking on the Post Effect and choosing "New | Sub Post Effect" from the list.

A computer animation program is primarily defined by its modeling. Without getting too technical, modeling technologies are divided into two camps: Polygons and Patches. Polygons are prevalent now but in the future, it is poised to be patches, which is a tool that helps create 3D models intuitively and quickly. Animation Master stands alone in its ability to use patches entirely throughout the animation process. So much so that the patches used by Animation Master have come to be known as "Hash patches". These patches can be exported as polygonal models for use in other applications such as game engines. High-count polygon models cannot be turned into low-count patch models.

Animation Master is one of the most powerful and affordable modeling and animation programs available. Specifically designed for classic character animation, the drag-and-drop, customizable interface and powerful motion tools give you the control that is required to tell your story.

For: Easy-to-use interface, uses patches entirely through the animation process, allows you to easily import sound files into your animation videos, low system specifications.

Against: None.

Easy watch

GOM Player is an easy-to-use application for playing video files on your PC. It is free and comes packed with some very good features. The interface is simple and all the buttons and the menus are arranged well. It supports most of the codecs; as a result you won't have to look for them over the Internet every time you fail to play a video format.

From the "Preferences" menu, you have the option of choosing the video formats you want GOM Player to open. The list includes formats like OGM, SKM, LMP4, K3G, VOB, DAT, etc. In the "Subtitles" option, you can make the necessary adjustments for your subtitles. Here, you can play around with the font, size or the display method of the subtitles. Applying effects on the subtitles is no sweat, you can choose between color, outline and shadow. Position your subtitles wherever you want and set your own character spacing. As you will notice, you have quite a text editor in here.

The "Video" option in the "Preferences" menu allows you to tweak video settings like resolution, framerate, color, contrast etc. You can change the output type according to your hardware configuration. It even allows you to add effects like smoothening, sharpening and adding noise to the video. You can also change the screen size of the player by switching from default settings to customized settings. This is particularly useful if you own a widescreen display. In the "Audio" section, you have the options of an equalizer and normalizer. A "Sound Effect" tab is available for those who wish to set voice filters, reverb and extra stereo.

Overall, GOM player is a very good application without any drawbacks that would prevent it from becoming your preferred video player.

For: Simple interface; supports almost all the file extensions; allows you to add effects to the video; free.

Against: None.

Video Player

GOM Player



System requirements: Windows XP with SP2, 233 MHz processor or higher, 64 MB of RAM, 200 MB of free hard disk space, graphics card with 64 MB or more RAM, IE 6.0 or Netscape 7.1

Price	Free
Contact	Gretech
Website	www.gretech.com

RATINGS

Ease of use	<input checked="" type="checkbox"/>				
Features	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Performance	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Overall Rating	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Find it on CHIP CD

Quick burn

The latest version of Ashampoo Burning Studio is a significant improvement over its predecessor. Maintaining functionality without compromising on ease of use, Ashampoo Burning Studio 6 incorporates many new and exciting features.

This application basically focuses on one aspect—to burn discs quickly and easily deliver maximum quality with minimum hassle. Some of the new features that have been incorporated in this version are support for Blu-Ray burners, integrated audio CD ripper, a feature-rich file backup utility for CDs, DVD and Blu-Ray discs including password protection, compression, spanning and restoration to original file locations. Other features let you burn disc images, erase media and make copies.

The well designed interface is easy to navigate. You can drag and drop files into a playlist-like window before proceeding to burn them. It also has a gauge at the bottom that indicates how much free space is available on the disc. Those who

have used Nero earlier would be familiar with this type of interface. Audio CDs can be burned from file types such as WAV, MP3, OGG and WMA. If stuck at a particular stage, you can always use the interactive trouble shooting assistant for solving most of your hardware and media related queries.

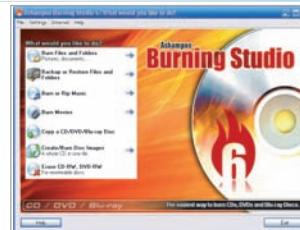
Ashampoo Burning Studio doesn't have all the advanced features that you will find in other commercial packages such as Nero's integrated WAV editor, but average users looking for quick and easy burning won't miss them. The simplicity of this software and its broad range of tools make it a superb choice for most disc burning needs. The software includes everything you need to burn a recordable CD and DVD easily.

For: Allows hassle-free disc burning; includes support for new-generation standards such as Blu-Ray; a well-designed; well-suited to beginners and for basic home applications

Against: Does not include some of the more powerful features of Nero.

CD/DVD Burning

Ashampoo Burning Studio 6



System requirements: Windows 2000/XP, 64 MB of RAM, 5 MB of free hard drive space

Price	\$29.99 (Approx Rs 1,400)
Contact website	www.ashampoo.com

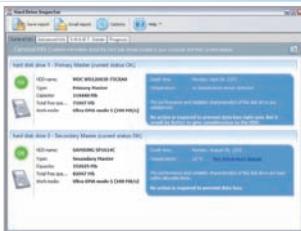
RATINGS

Ease of use	<input checked="" type="checkbox"/>				
Features	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Performance	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Overall Rating	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Value for money	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Find it on CHIP CD

System Utility

Hard Drive Inspector 1.85



System requirements: Windows (all versions)

Price \$29.95 (Approx Rs 1,500)

Contact AltrixSoft

Website www.altrixsoft.com

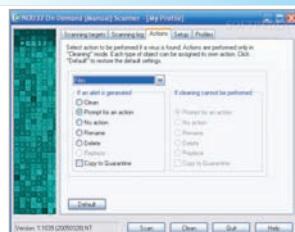
RATINGS

Ease of use	<input checked="" type="checkbox"/>				
Features	<input checked="" type="checkbox"/>				
Performance	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall Rating	<input checked="" type="checkbox"/>				
Value for money	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Find it on CHIP 

System Security

NOD32 Antivirus



System requirements: Windows all versions), 32 MB RAM, 30 MB of more free hard drive space

Price \$40 (Approx Rs 1,840)

Contact Eset

Website www.eset.com

RATINGS

Ease of use	<input checked="" type="checkbox"/>				
Features	<input checked="" type="checkbox"/>				
Performance	<input checked="" type="checkbox"/>				
Overall Rating	<input checked="" type="checkbox"/>				
Value for money	<input checked="" type="checkbox"/>				

Find it on CHIP 

Data safety

Hard Drive Inspector is an application that warns you of an impending hard disk crash and lets you back up your important data. The program is based on the S.M.A.R.T technology. It installs quickly without any hassle.

The interface is simple and ensures you are at ease even when using it for the first time. It checks for hard drive changes and performs the necessary diagnosis. For example, an increase in the drive spin-up time and the number of retries it takes to succeed in spinning up the drive usually means motor and/or bearing failure, which can lead to data loss.

Hard Drive Inspector accesses S.M.A.R.T. data, processes it and informs you when your hard drive is no longer safe to use. This gives you the option to back up your data before anything untoward happens or you can replace your HDD, especially when dealing with mission-critical business data.

While Hard Drive Inspector is very simple and can be used by a complete newbie, the program offers advanced features for professionals too. It is completely customizable and is capable of granting access to S.M.A.R.T. monitoring data in real time. It imparts a great deal of information like temperature, speed, space, partitions, etc, which comes handy when your PC crashes.

On the flipside, this is a shareware application while there are lots of other freeware applications available. Motherboard Monitor, for instance, offers almost the same features. Also, the software is rather unstable at times.

For: Based on the S.M.A.R.T technology, it warns you when your drive is on the verge of a crash. It has a simple interface; can be used both by the geek and the novice.

Against: Other freeware applications are available which offer the same features; unstable at times.

Supreme protection

Tired of all using anti-virus software that protects your PC adequately but chokes your system resources? If you are one of those looking for anti-virus software that won't compromise on the security of your system but will ensure that your PC runs fast enough, take a look at the NOD32 Antivirus. It is a solid performer, easy to use and has little impact on system resources.

Installation is simple; a customized or an advanced install gives you control over all the default functions. NOD32 is an effective anti-virus system with a number of distinct modules to handle file scanning, e-mail scanning, real-time protection and more. A Control Center pulls the various modules together. There are innumerable configurations that might confuse the novice users initially. The new version features extended protection to cover spyware and other related threats. Advanced heuristics provide enhanced detection for new viruses, worms and Trojans. It can optionally send an e-mail notification when it blocks a threat.

NOD32 runs in two different ways—you

can run a simple scan or spend more time at the control center, within which you can have access to tons of customization features and different types of scans such as DMON, IMON, EMON and AMON. AMON is the resident or "on-access" anti-virus monitor. IMON monitors Internet traffic. EMON provides protection from e-mail borne viruses. DMON scans Microsoft Office documents and other files downloaded directly from the Internet.

NOD32 is a first-rate anti-virus program that offers several levels of superior protection. However, it is a bit difficult to understand the program as it is replete with technical jargon. Therefore, we don't recommend it for the average home user. However, a techie would love the customization abilities and the scanning power of NOD32.

For: Utilizes less system resources; separate modules to handle file scanning and e-mail scanning.

Against: The average user might be confused with the customization options on offer.

All-direction browsing

If you have dreamt of an Internet in three dimensions, check out this free web browser—3B Browser is a nifty little browser that arranges web sites such that you can “walk” through a virtual 3D world to browse them.

The browser creates 3D galleries from your favorite web sites, essentially turning web pages into the walls and corridors of a virtual “city” through which a user can wander as though he were playing a 3D video game! It provides you with three views namely the 3B view, Web view and Map view. In order to switch between views, you need to click on the relevant thumbnail in the 3B control panel. The 3B view, which is the default view, essentially gives you a 3D city of web sites allowing you to move around it and deciding at a glance which of the web sites you want to visit. This recreates the window-shopping like experience for browsing.

The Web view allows you to navigate the

web sites just like any other conventional web browser would allow you to. This helps you to save bandwidth in case you are downloading some files or need to have a faster browsing experience. The Map view gives you a bird’s eye view of the city you are in. To load a set of web sites into a personal gallery, you must log into the developer’s site, choose one of the five designs and enter the URLs. Each city holds up to 52 web pages. However, you can take advantage of this wonderful experience only if you have a broadband connection. But even with a broadband connection, we found that it takes a lot of time for the browser to render the web pages in its 3D environment. This is a fun browser to play with, but tends to become gimmicky in the long run.

For: Simulates a 3D browsing environment; you can load 52 web pages into each city; free.

Against: You need a broadband connection in order to use this browser.

Web Browser

3B Browser



System requirements: Windows (all versions), Broadband connection, 64 MB RAM

Price	Free
Contact	Three-B International Ltd
Website	www.3b.net

RATINGS	
Ease of use	█ █
Features	█ █ █ █ █
Performance	█ █ █ █ █
Overall Rating	█ █ █ █ █

Find it on CHIP 

Safe surfing

Bitdefender 9 Internet Security is an addition to the already burgeoning list of Internet security suites available today. However, when compared to the other applications in its category, it provides effective protection against viruses, spam, fishing threats, spyware and intruders.

As you might be aware, installing an Internet Security application can be quite a pain. But with Bitdefender 9 Internet Security, this was a breeze. After installation, the application scanned the hard disks for files that were infected by viruses. It features five modules, namely the Anti-virus, Firewall, Anti-spam, Anti-spyware and Parental Control.

The Anti-virus module protects against virus that could enter your system via files downloaded over the Internet and P2P applications. Additionally, it also provides e-mail protection. In the Firewall module, you can define precisely which incoming or outgoing connections to permit/deny. The Stealth mode option available here will ensure that your computer stays hidden from malicious software or even hackers.

The Anti-spam module analyzes incoming mail traffic and determines if the messages are spam or not. You can customize these settings with the slider bar. However, if you choose to set this bar at the highest setting, you may find some of the critical mails classified as spam and shifted to the junk folder. This aspect needs to be fine-tuned by the user.

The Anti-spyware module continuously monitors your system to detect possible areas where spyware could attack. It even monitors changes made to your system and software. The Bitdefender parental control module blocks access to web sites that you would deem unfit for viewing. An interesting feature of this application is that you can block access to the Internet for a certain period of time; you can also block games and filesharing applications. The software performs all these functions without utilizing much of your system resources unlike other Internet security suites.

For: Good feature set; doesn’t choke your system’s resources; parental controls.

Against: Anti-spam needs revamping.

System Security

Bitdefender 9 Internet Security



System requirements: Windows 2000/XP, Pentium MMX 200 MHz or higher processor, 128 MB of RAM, 40 MB of free hard disk space, Internet Explorer 5.5 or higher

Price	\$65 (Approx Rs 2,990)
Contact	SoftWin
Website	www.bitdefender.com

RATINGS	
Ease of use	█ █
Features	█ █ █ █ █
Performance	█ █ █ █ █
Overall Rating	█ █ █ █ █
Value for money	█ █ █ █ █

Find it on CHIP 

Going Live

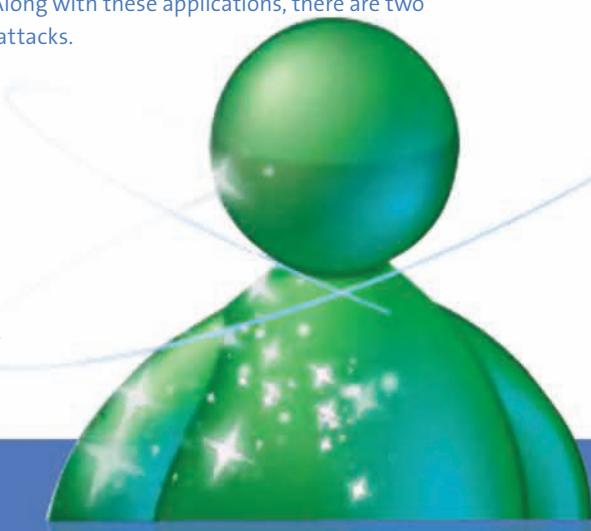
An array of new and spiffed up functionalities have made communicating on Windows Messenger fun and fulfilling

The new and improved Windows Messenger is finally here. Certainly "Live ideas" has helped to titivate the chat experience on MSN. Messenger Live has been rendered with a set of applications that are interoperable and offers the much-needed control over information, contacts and interests. These applications are designed to meet your search and communication needs, irrespective of where you are. You can connect to the Internet and log on to any of the applications that offer searching, organizing your event calendar, sifting through daily news around the world or even chatting with your friends. Along with these applications, there are two variants of security applications to protect your PC and your online documents from virus attacks.

Live Ideas offers a bouquet of new services such as search, home page, messenger, question and answer forum and more. Its online search displays the result in a single page. All you need to do is scroll through the page and it will automatically refresh to show the results, which otherwise you would have found on the next page. The personal home page of Live.com provides you with all the information you can

possibly want such as e-mail, weather forecast, world news, sports, entertainment and even search. The page is categorically tabbed so that you don't have to hunt for information.

The new messenger has been rechristened Windows Live Messenger and has been endowed with two new features—file sharing, PC-to-PC or PC to phone within its new interface.



My Winks

Select a Wink from the list below and send to a contact.

Default Winks

Today

Tuesday, July 11, 2006

Good afternoon, pradoshmitra@hotmail...

MSN Today Hotmail News Refresh

Superhero turns 'Thief'
From superhero to smooth-talking thief - Hrithik is getting an image makeover in his new movie Dhoom 2

What's hot on MSN Search?

- Search Zinedine Zidane
- Search Roger Federer
- Search Amitabh Bachchan
- Images: Hrithik Roshan
- Images: Wimbledon final

Zidane wins the Golden Ball
French captain Zinedine Zidane was named the best player of the World Cup and won the Golden Ball on Monday

Dr. Amitabh Bachchan'
In a rare gesture, Bachchan will be conferred with an honorary degree of Doctorate of Arts by a UK University

Kolkata, West Bengal
Light Showers 30°/25°

Search the Web

Search

With MSN Messenger you can:

- Chat with buddies online
- Create your own emoticons
- Play games while you browse the web!

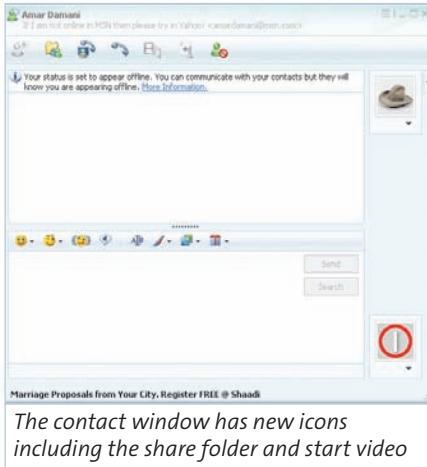
Get Marriage Proposals Daily!
Join now FREE!

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Don't show this window when Windows Live Messenger starts

The interface displays all the controls that were present in the previous version of Messenger. The only difference in Live Messenger, is the option of hiding the menu bar so that you can see the contact list without any unnecessary tabs or controls. Changes are also visible on the "Live Today" page. The window refreshes with a smooth dissolve effect on changing the tab, as opposed to quick changes on the window in the previous version.

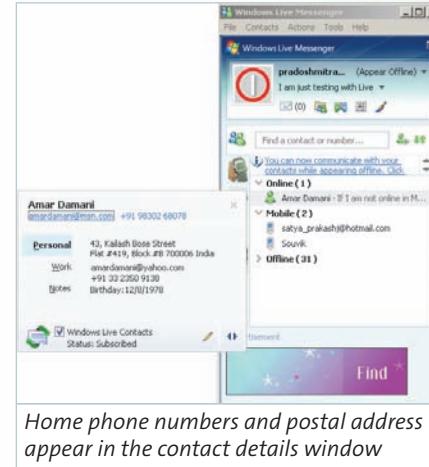
Once you select a contact, you will notice the three new icons on the top of the window—for sharing folders, calling a contact's PC or phone. The Shared folder feature allows you to share a folder containing multiple files between you and your friend. One unique advantage of this feature is that even if one of you is offline, the other can still access the contents of the folder and make modifications if the need arises. You just have to click on the Shared folder icon and choose the option "Create a sharing folder". This will open another window, where you simply need to drag and



The contact window has new icons including the share folder and start video

drop the files you wish to share. Once the files are placed, they can be accessed by any one of you.

The PC-to-phone calling feature has been long overdue. You need to install your home, office and mobile phone numbers on Live

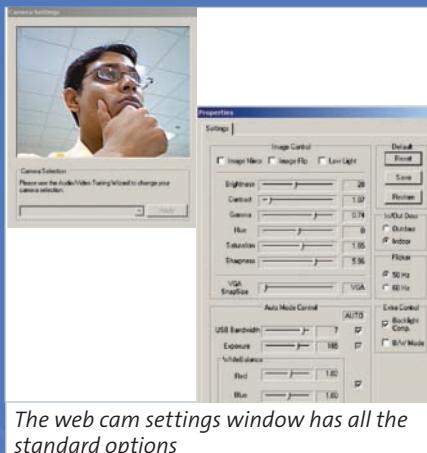


Home phone numbers and postal address appear in the contact details window

Messenger, then click on "Call a contact". Live Messenger will call your selected friend and the two of you can voice chat over the Net. A dial-up connection is a must to make outbound local, domestic and international calls at affordable charges.



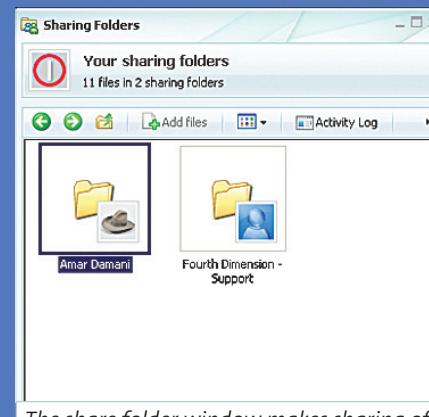
Pramod Jadhav



The web cam settings window has all the standard options

Like many other chat clients, Live Messenger also has the option of making video calls, provided both you and your friend have web cams installed. The web cam settings window is quite user friendly. (Microsoft has also marketed two web cam models, the LifeCam VX 3000 and 6000, specially designed for Live Messenger.)

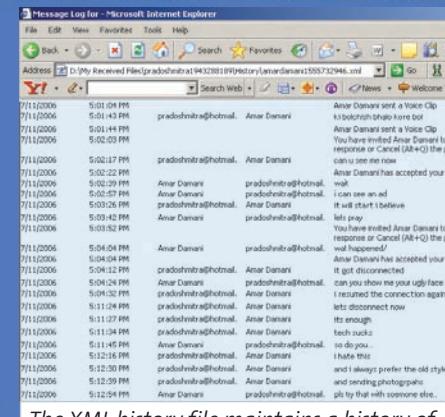
Live has remodeled the history option. In this, a conversation with a contact generates a history file in the XML format. If the file is opened in IE you will get every detail like date, time, contact's name and the message arranged chronologically.



The share folder window makes sharing of files and folders easy

Most significantly, Live Messenger has finally grown friendly with Yahoo Messenger—with this version, you can even communicate with your Yahoo contacts through the Live Messenger interface itself. No more hassle of logging into multiple messenger applications to get in touch with your contacts.

Next on Live Messenger, you can even include robots as contacts. Once a question is asked, it will connect to one of several online encyclopedias and fish out your answers. So you can enjoy the benefit of getting precise



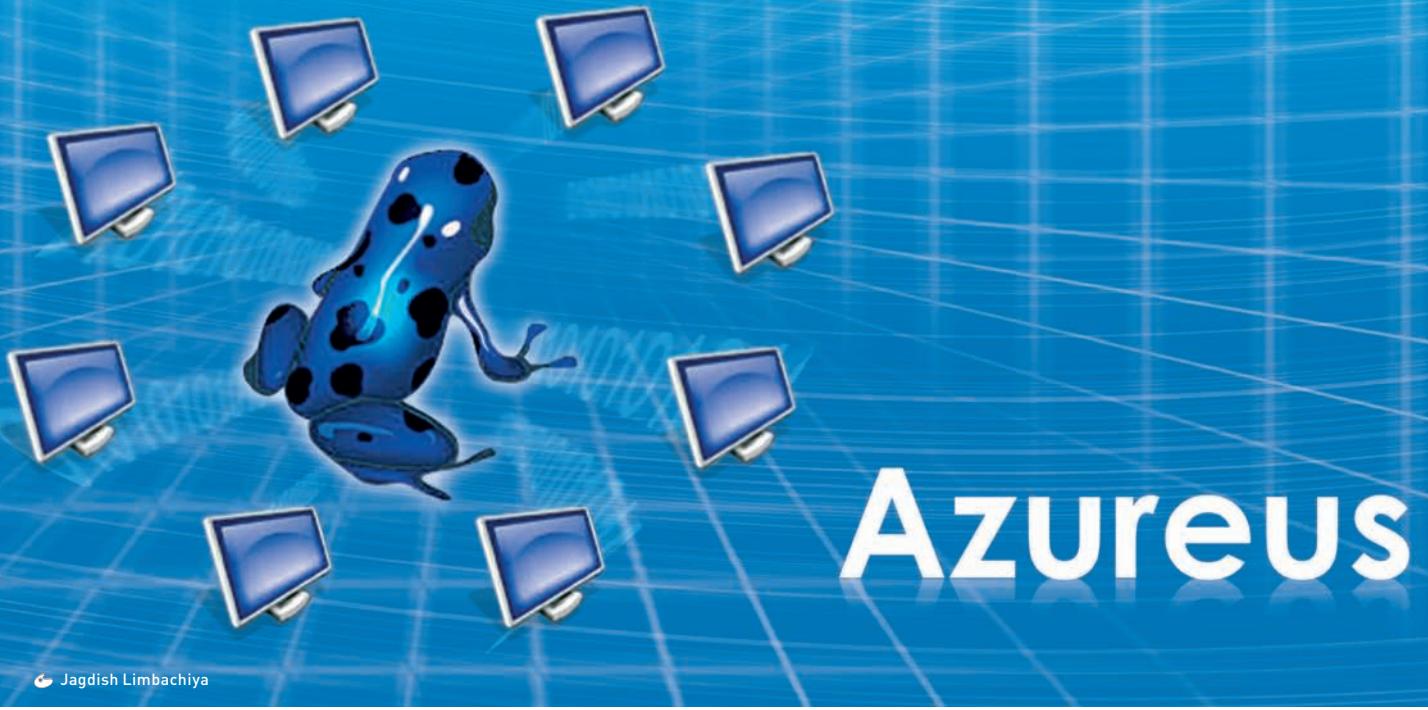
The XML history file maintains a history of conversations with date and time stamps

answers to your questions without having to trudge through several web sites. Like all other contacts, robots are also capable of communicating with multiple users. If you want to add a robot as a contact, to log on to www.robotinvader.com and visit the robot gallery to select one of your choice. ■

| Pradosh Mitra



SMS us! Story code: AFL (See Page 20 for details)



Jagdish Limbachiya

Azureus

Tracking Torrents

The more files you share with others, the faster you download—that's the logic BitTorrent follows to enable transfer of gigabytes of data instantly

Give and ye shall receive!" said Bram Cohen to all download junkies in the heydays of the P2P revolution about three years back and BitTorrent was created. BitTorrent ushered in a new era in file sharing as gigabytes of data could be downloaded instantly without the pains associated with traditional P2P file sharing. Soon downloading feature films and complete albums was a breeze.

Unlike the P2P method of sharing files, the BitTorrent protocol offloads some of the file tracking work to a central server (called a tracker). It is built on the premise of give and take. This

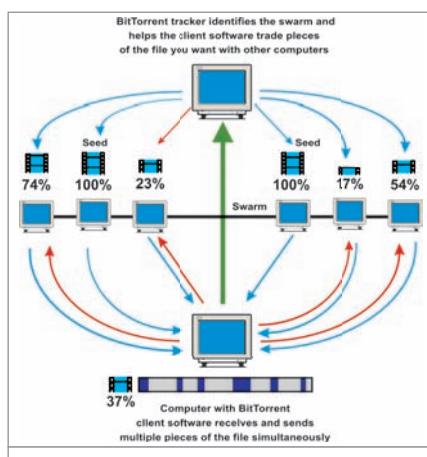
means that in order to receive files, you have to give some. This solves the problem of leeching, where people don't share the download once it is done. With BitTorrent, the more files you share with others, the faster you download content. Also, to make better use of available Internet bandwidth, BitTorrent downloads different pieces of the file you want simultaneously from multiple computers. This method also requires you to download and install a specific application called a BitTorrent client just like a P2P client.

It works like this: you visit a torrent search web site and locate the file you want. When

| Leeching

In traditional peer-to-peer file sharing, P2P applications installed on your PC such as Kazaa, Morpheus or Limewire locate the content you need by running a manual search. It then sends out a request for the file you want to download. To locate the file, the application queries other computers connected to the Internet and running the same file-sharing application. When it locates a computer with the file you want, the download begins. Others using the

file-sharing application can obtain files they want from your computer's hard drive also. The file-transfer load is distributed among the computers exchanging files but file searches and transfers from your PC to other PCs can cause bottlenecks. Some people download files and immediately disconnect without allowing others to obtain files from their systems. This is known as leeching. This limits the number of computers the software can search for the requested file.



you click on the link provided there, the BitTorrent client application communicates with a tracker to locate other computers running BitTorrent. The tracker identifies the swarm, or “connected computers” that have all or a portion of the file and is in the process of sending or receiving it. The tracker helps the client software trade pieces of the file you want with other computers in the swarm. Your PC receives multiple pieces of the file simultaneously. Let us take an example, say for instance, 10 people are looking for a 100 MB file. The original holder of the file would have to upload it 10 different times for a total upload of 1 GB, making for a precious waste of time and bandwidth. With BitTorrent, the file is divided into tiny parts; say 500 at 200 KB each. As each user connects to the original seeder, he or she downloads a different piece of the file from the original holder, following which BitTorrent searches for the nine other users downloading the same file and finds out what pieces they have. It then begins downloading the pieces they have. Concurrently, it begins uploading his pieces to the other nine.

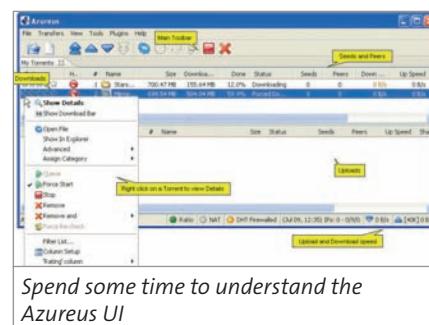
If you continue to run the BitTorrent client software after your download is complete, others can receive .torrent files from your computer; your future download rates improve because you are ranked higher in the “give and take” system. By downloading multiple pieces at the same time, the overall speed is greatly improved. The greater the number of computers involved in the swarm, the faster the file transfer occurs because there are more

sources of each piece of the file. BitTorrent is especially useful for sharing large, popular files.

Azureus: King of BitTorrent clients

The original BitTorrent client application written by Bram Cohen in Python was rudimentary. Though it is available today in a new and improved avatar, other applications have become more popular simply because of their functionality and features. Azureus is by far the best BitTorrent client out there. It sports a neat interface when compared to other clients plus it is also more intuitive.

Take a look at the graphic alongside. Below the main toolbar is a pair of windows. The one at the top tracks the files you’re downloading, the one at the bottom shows



files you’re uploading. Right click on any file, select “Show Details” and it will open up a host of graphical views. Controls over upload and download speeds and the ability to update the tracker are available at the click of a button. Built in Java, Azureus runs on just about any OS. It gives you all the required information expected from a good P2P client such as the download and upload speeds, how much you’ve downloaded and the time taken in the transfers.

Installation and configuration

To install Azureus, get yourself two things—a) the latest version of the Java Runtime Environment (JRE) from www.sun.java.com as this is mandatory and b) the latest version of Azureus from <http://azureus.sourceforge.net>. Install the JRE and Azureus in that order. Both should be a simple “Click” and “Next” sequence. Once Azureus is installed, it will start the



configurations wizard. The first thing you will be asked is to provide information on your transfer and Internet connection details. Don’t limit your upload speed to a low value as it will backfire on you and give you slow downloads and eventually could get you banned from a tracker if you are suspected of leeching. There are two ways you can set your upload speed here. You can either use the Line drop-list to select a pre-determined restriction, which are the most popular upload speeds. Alternatively, you can manually set the upload speed yourself by changing “Line” to “Custom” and using the Max Up Speed (KB/s) drop-list to choose a speed. You should pick a high enough restriction but for best results pick one that is just a little bit less than your overall connection speed. This will ensure that you upload pretty fast but that you still have some available upload for other processes and download also will be quicker. Remember that uploading is vitally important for the life of a torrent and should not be avoided by any means; whatever speed is possible for you to upload at.

The next thing you need to do is set the port Azureus is going to use. The BitTorrent default port is 6881 but since many ISPs have began blocking or limiting this port, you are better off changing your port to something else. Choose any port at random and hit the “Test” button. This will check if the port is fully accessible from the Internet. For some people it takes a lot of testing before they find a good port for various reasons including firewall usage and the use of routers. In case of routers, you will need to use port forwarding for whatever port you decide to use with Azureus. In case of a firewall, make sure Azureus has unlimited



Test your port settings

access to the Internet. Picking a port that your ISP has blocked will result in slower downloads and possibly no torrent activity at all. So it is important you get a port that is fully accessible from the Internet. When you are done with that, click on "Next". You will then be asked to choose a location to save the torrent files that you have selected.

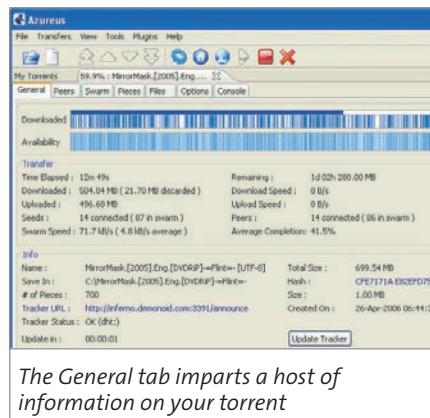
Now you can begin downloading torrents with Azureus. First, visit your favorite torrent web site to hunt for your desired file. (Try www.torrentz.com, it's the best!) With Azureus running, click on the download torrent link on the web site and it will be automatically added to the list of downloads in Azureus. If your Internet connection is active, the tracker will immediately start connecting you to seeds and peers. The download will start immediately but will generally be slow. As more and more connections are created, it will speed up. The health of your downloads are indicated by smileys. After a download has started, usually it changes color from gray to yellow and then after a little while to green if the download process is okay. A lot of users report getting a yellow smiley all the time, but their torrents remain active and transfers continue. Click on "Help | About Health" to get an explanation of each colored smiley.

While a file is downloading, right click and click on "Show Details". You will see the filename, Tracker URL, Hash and the file Comment. A ratio over 1.000 means that you've uploaded more than you've downloaded which is good. Continue uploading even after the download is over—something that is expected at minimum from users. This is not a free for all download as far as certain sites are concerned. Some trackers maintain share ratio statistics and

could eventually ban you if you are just downloading and not uploading.

Advanced features

Azureus has loads of bells and whistles to make your BitTorrent experience better. Take for example the option of choosing File Download Priority. This is best used and explained in full-album downloads. This feature lets you download the better songs first and not download some at all. Prioritize files for download within a torrent. Simply double click on the torrent of your choice in the main window. Then right click on the file you wish to adjust the settings of and switch accordingly. Next comes the Bouncer feature. If you want to play the boss and ban a peer, select a torrent, click on the "Peers" tab, right click on the user and select "Kick and Ban". The Swarm feature shows the collection of peers attached to your files by a visual representation of the swarm

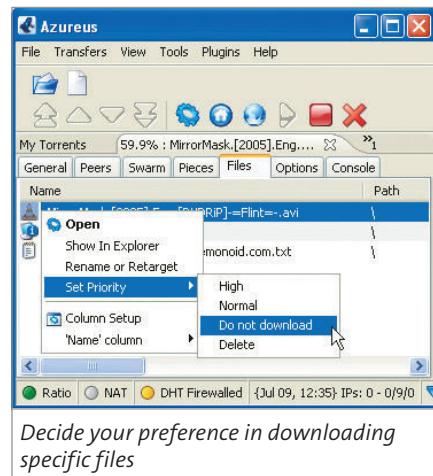


The General tab imparts a host of information on your torrent

cluster. Click on the "Swarm" tab to bring this up and watch the data transfer back and forth. Speed Throttling is a nifty feature to adjust speeds of specific torrents. Here, all you have to do is select the torrents you wish to adjust, right click and scroll through until you get to the actual speed settings. This comes in handy if more than one of your torrents is uploading at far greater speeds than the others, thus affecting their download rates.

Enhancing Azureus with plug-ins

Install plug-ins in Azureus by selecting "Plug-ins | Installation Wizard" in the applications window and you will get a list of the available ones. Here are some of the best:



Auto speed

It automatically adjusts the global upload speed limits based on network latency in order to maximize download speeds. It pings a configurable IP address and uses the ping times to continually update the upload speed limit.

3D view

This plug-in displays a 3D view of a torrent's swarm. The cylinder in the center represents you while the green and pink ones outside represent seeders and leechers respectively. The data you download is denoted by blue and fills up your cylinder in the center. What you upload is denoted by the pink "bullets" that flow from the center to the leechers.

Chat

This one creates one chat channel per torrent for connected peers. Simply click on the torrent you wish to chat about and it will log you in to the chat channel automatically. Then type your comments in the chat box at the bottom of the window.

Firefrog

This provides a separate window displaying the status of your torrents, while the data is either being leeched or seeded. The progress bar shows the status. So for those who want a simple progress display on the desktop while doing other tasks without having to keep Azureus open, this is a must. ■

| Raunak Roy

Dapper Desktop

As more people are adopting Linux, we take a look at the most popular distribution, Ubuntu 6.06

Unix is making great strides to portray itself as an easy to use desktop operating system. A couple of competing Linux operating systems that are geared to ease of setup and use are Fedora Core 5, OpenSUSE 10.1, etc.

This month we review Ubuntu, which is one of the most popular desktop-based Linux distributions. Its popularity can be gauged by its top position at DistroWatch last year (source: www.distrowatch.com). A copy of the latest version can be found on the July 2006 issue of IC CHIP DVD. If you do not have that copy, you can download the Ubuntu ISO from <http://releases.ubuntu.com/6.06/>. Click on ubuntu-6.06-desktop-i386.iso for 32 bit platforms or on ubuntu-6.06-desktop-amd64.iso to download the AMD64 platform. Version 6.06, code named "Dapper Drake" is Ubuntu in its latest avatar. So, following the hoopla about the new operating system, we decided to get our hands dirty with it.

What we liked about Ubuntu was that the entire install is packed in a single CD which also doubles up as a LIVE CD for preview before the actual install process is accomplished. This ensures that all the hardware is supported and functional before the user actually starts the install process. No other distribution supports this feature.

Booting the LIVE CD

A CD self-check option also exists, which avoids an unpleasant experience of knowing that the CD is corrupt in the middle of an installation. Beware, running the Live CD is not for the weak hearted



The default Ubuntu splash screen showing different startup options

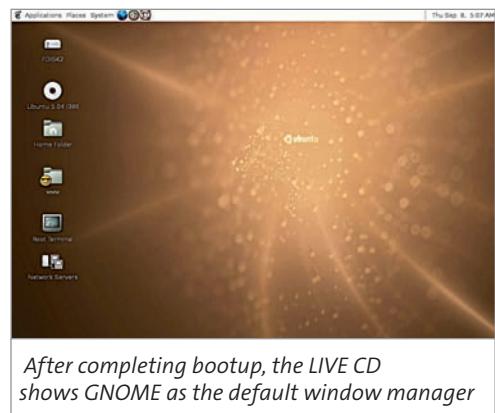
systems—you need at least 512 MB of RAM to run the Live CD decently.

While GNOME is the default window manager in Ubuntu, users who prefer KDE should download a different port called kubuntu. Here we would like to highlight that Ubuntu worked out of the box on most hardware platforms that we tested it on. Of course, don't expect it to work on your cutting edge, top-of-the-line hardware; the kernel still does not have drivers for ATI-based chipsets. Ubuntu did not work on the HP Compaq NX6125 laptop but detected almost all the hardware of the Lenovo 3000 N100 notebook. The OS detects most of the older NVIDIA, Intel and VIA chipsets out of the box. The 2.6.15 kernel ensured seamless SATA support. X.org 7 with the stock nv driver ensured compatibility of Nvidia-based graphic cards—from the 6600 all the way up to the 7950GT series. The other hardware that it detected out of the box was an Apple iPod Shuffle (along with syncing the playlists in iTunes inspired Rhythmbox music player) and all hard drive-based MP3 players.

It also mounted all USB-based external hard drives and thumb drives out of the box. File sharing with windows also works right off the bat.

Software in Ubuntu

Although Ubuntu features a single CD download, it provided a decent mix of applications. It included Firefox and Evolution as the browser and E-mail client respectively. Evolution ensures smooth connectivity and compatibility with

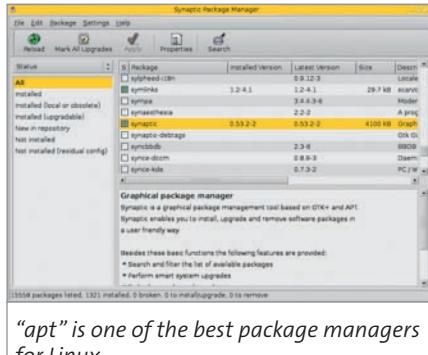




The Rhythmbox media player has the look and feel of iTunes



The default media player in action—playing a non proprietary video format



"apt" is one of the best package managers for Linux

Microsoft Exchange-based mailing solutions. It even supports shared contacts, To-do lists and calendaring systems.

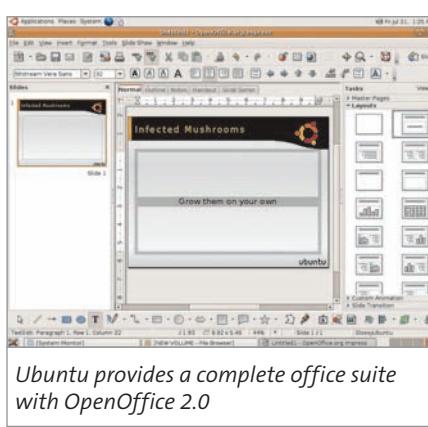
Other software include GIMP for image editing, GAIM, which is a multi-protocol based instant messenger, audio player, Totem movie player, Audio CD creator and extractor, etc. Ubuntu includes version 2.0 of OpenOffice which is completely compatible with Microsoft office documents minus the VBA macros in excel. This setup closely resembles a Microsoft Windows-based system and one can be pretty sure that Microsoft Outlook will not be missed any more.

The Linux "Control Panel" mainly consists of two distinct sections known as Preferences and Administration. The former basically contains options which control your desktop's look and feel like themes, wallpaper, fonts, keyboard and mouse control, screen resolution, sound control, etc. The Administration section consists of various utilities to manage hardware like the device manager, disk manager, partition manager, networking, printers, etc. This section also comprises the user manager

which can be used to create and manage users on your newly created desktop.

Installation

Installing the OS was pretty much a straight forward process once we verified that all the hardware worked perfectly using the live version of the CD. Ubuntu now features a GUI based installation system. An install file on the desktop fires up the installation wizard and the installation is a six-step process. The partitioning process was easy and what we really liked about it was the ability to resize an existing windows partition and install Linux on the newly created free space. We were quite disappointed not to find XFS, JFS or ReiserFS as an option to format the file system. Unlike some distributions, Ubuntu does not automatically detect and mount your existing windows partition. Audio buffs will be disappointed to find that Ubuntu can not natively play MP3s, DivX and other restricted formats. However, you can run an application called Easy Ubuntu that will install all the required codecs to play the restricted formats. Ubuntu also, by default, does not have support for Flash, Java and video plug-ins for the web browser. This can be easily taken care of by



Ubuntu provides a complete office suite with OpenOffice 2.0

using Easy Ubuntu.

The OS is easily updated using the update manager. Synaptic (a front-end "apt") is the best software management program. Installing a new package is a simple point of click and the OS takes care of the dependencies, which was a nightmare previously while installing any packages.

It even features an add/remove package management feature just like Windows which can be used to install and remove the most popular applications under various categories.

Last word

Thus, one can conclude that Ubuntu Linux is as easy to use as a Linux distribution can get. Its installation is flawless under most conditions and will work on most hardware barring a handful. Driver support is still a major reason why Linux does not reach the enterprise desktop, but from what we've seen here, it is indeed making great strides. It has a complete range of applications available and it features a minimalist install compared to other bloated distributions. We highly recommend you to give the LIVE CD a try. ■

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Account Editor

Identify Receiving Email Receiving Options Defaults Exchange Settings Security

Out Of Office

The message specified below will be automatically sent to each person who sends mail to you while you are out of the office.

Status: I am in the office I am out of the office

Hi

Security

Change the password for Exchange account Change Password

Manage the delegate settings for Exchange account Delegation Assistant

Miscellaneous

View the size of all Exchange folders Folders Size

Integration with Microsoft Exchange mail server is made simple with Evolution

| Kunal Rupera



Jagdish Limbachiya

Surfing satisfaction

More secure and easier to use—kick off the new and notable Internet Explorer and make the most of it with our assortment of quick tips

Surfers who have not yet changed over to alternative browsers like Firefox are surely waiting for this. Competitive pressure must have helped the Internet Explorer's rebirth, which is already way past its prime.

So what is the new Microsoft browser capable of? Finally, there is "Tabbed Browsing" found in other competitive browsers like Firefox and Opera where multiple web sites can be managed through the registry. In addition, IE7 offers Phishing protection, which is important in these times of net piracy. This is not all, some of the features of IE7 even out do those of its competitors.

The browser's English beta 2 phase is already going strong. CHIP offers you some useful tips about obtaining, installing and making the most of the new browser and its features.

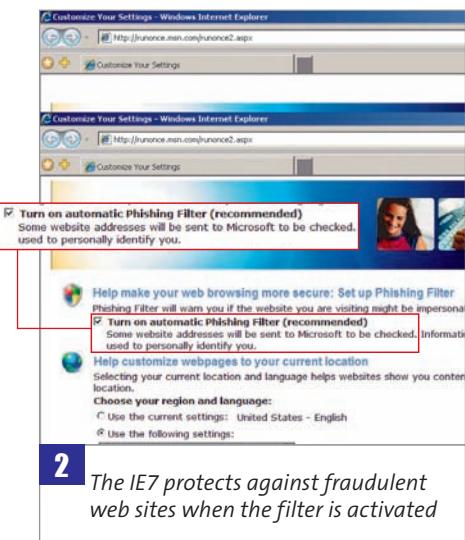
1 Installing the browser

You require an active Windows XP for installation; other operating systems cannot be used (while installing, the IE7 setup checks the operating system). Ensure that IE7 is not installed on a cracked version of Windows XP. In the browser, open the web site www.microsoft.com/downloads and type "Internet Explorer 7" in the search engine on the top right corner of

the web site. After clicking on "Go", a list of hits is displayed. Select "Internet Explorer 7: Beta Preview", click on "Get Beta 2 Preview" on the Web page and then finally on the link "Download the Beta Preview". Save the file "IE7B2P WindowsXP-x86-new.exe" on your system and open it once the download is complete. The file size is approximately 12 MBytes. In the second step, Windows gets validated. You need to be online for this validation. After a few moments, you receive an "OK" for continuing with the installation process. On clicking "Turn on automatic Phishing Filter", the integrated Phishing Filter is activated but this step can be executed later also. This security feature is one of the browser's latest innovations. After you have selected the country and language, click on "OK" to initiate the installation. Open a new homepage and your IE7 is ready for some surfing.

2 Setting up the Phishing filter feature

If you have not activated the filter during installation, it can be done now. Open "Tools | Phishing-Filter | Phishing Filter Settings ..." and scroll down to the end of the dialog displayed on



2 The IE7 protects against fraudulent web sites when the filter is activated

the screen.

Under "Phishing Filter", activate the "Turn on automatic web site checking" option and confirm it with "OK". From this point on, the filter checks all polled web sites. Under the menu "Tools | Phishing Filter", you have the option of temporarily deactivating the automatic check or initiating a check of the updated web sites again. Although this operation functions very smoothly, it does tend to set off false alarms at times.

3 Opening the menu bar

After opening the browser window, one notices that navigation buttons and the address bar have been added under the window title bar. The menu bar can be opened by clicking on the "Tools" symbol, selecting "Toolbars" and then "Classic Menu". The familiar options in the menu like "File", "Edit", "View", "Favorites", "Tools" and "Help" are at your disposal again, just not at their usual position, instead under the address field. The menu bar is almost fixed to its place, even when you right click on the free space and deactivate the option "Lock the Toolbars" in the context menu.

4 Adjusting the menu bar

The tried and tested Windows layout has been changed. However, just one intervention in the registry and this can be customized:

Go to the "HKEY_CURRENT_USER\Software\Microsoft\Internet Explorer\"

Toolbar\Web Browser" key in the Registry Editor and right click on a free area on the right side of the window. Select "New |DWORD value" and type "TBBar7Position" as name. After double clicking on it, enter the value "1". Now start the Internet Explorer again. You will now find the menu bar where it belongs—under the title bar.

5 Activating the link bar

Like other browsers, IE7 also has a "Links" icon bar. The web site links saved in it can be accessed with just a click.

However, many useful bars are hidden in this new user interface. These can be activated easily—just right click one of the icons in the toolbar (around the printer). A context menu opens. You will see a tick mark in front of "links". The program now opens the Container of the same name under the address bar. You can now easily drag the icon of one of the interesting web sites from the address bar to the link bar.

6 Using tab functions

Now IE7 has not only a trendy user interface but also an integrated tab browsing features. Here's how you can use it—to open a new tab, use the key combination "Ctrl+T" or click on the "New Tab" icon on the right side of the last tab.

Enter an address and press "Enter", the browser opens the web site in a new tab. You also have an option of opening an entered address directly in a new tab. After typing the address, keep the "Alt" key pressed and hit enter.

7 Saving tabs as favorites

If you click on the plus sign in the tab bar, a menu opens, where you have an option of saving a single web page or all opened tabs as a group in Favorites. The latter is practical in order to maintain the status quo while researching. Now, click on "Add Tab Group to Favorites" and assign a name to the group in the next dialog. The Explorer saves the group in Bookmarks under the given name.

8 Initializing multiple homepages

If you are one of those who likes to skim through online magazines while sipping

your first coffee of the day, then this new feature is just the thing for you. And if you are wondering how, then all you have to do is set the web sites as multiple homepages, click on the Home icon and voila! All web sites open together in separate tabs. To start with, you have to load the web sites that you want to set as homepages in separate tabs. Then, click on the down arrow in the icon bar near the Home icon and a menu will open. In the menu, select "Change homepage ..." and then "Use the current tab set as your homepage". Confirm it with "OK".

9 Navigating using thumbnails

Even power surfers tend to lose track when they view too many web sites simultaneously. In such a case, the "Quick Tab" feature is really useful. For instance, after clicking on the icon, with four blue rectangles, the Internet Explorer displays thumbnails of all opened web pages. And what's more, the thumbnails are big enough for you to recognize the contents of the windows. Just click on the web site you are looking for and the thumbnail maximizes to display in the corresponding tab.

10 Subscribing RSS feeds

IE7 now supports RSS feeds. It even shows the icon that is popular in Firefox in its icon bar. RSS stands for "Real Simple Syndication" and sends headlines of new or changed web site contents to the subscriber's browser on a regular basis. What makes this feature so user-friendly is that the headlines are updated constantly without you having to visit the homepage of the feed provider—an ideal feature for news tickers and blogs. For instance, our web site (www.chip-india.com) provides RSS feeds for free. IE7 automatically recognizes all web sites that offer the RSS feature. The RSS icon turns orange every time such a web site is identified. To subscribe to this service, all you need to do is click on the icon and confirm your subscription in "Subscribe to this feed" on the web site, which is next to the plus sign. Make sure you enter the name and memory location in the following dialog for subscribing to the RSS feature. As for the ideal drive location, IE7

THE COCKPIT OF THE NEW SURFING HUB

The user interface of the new Internet Explorer 7 has been improved considerably. Features like Quick Tab are easily accessible, while some other browsers require plug-ins for the tab feature.



normally recommends the folder "Feeds" under "Favorites Center". Confirm with "Subscribe". Now all you need to do is click on the subscribed RSS feed, and IE displays the headlines of the latest messages in the browser window. If you find a particular headline interesting, just click on it and the complete message opens automatically.

11 Sizing pictures with text

Many web sites are annoying to surf due to the small font size. Although the font size could be increased in the old IE using "Ctrl+Mouse wheel", the size of the graphics and pictures remained the same.

So the page layout appeared as if it were programmed by an HTML novice. The new browser does it smarter—it can increase or decrease the size of all web site contents (including pictures) continuously or in fixed steps. Click on the zoom option on the status bar for the same and select a suitable zoom-in percentage in the context menu. The web site layout does not change.

12 Using the new print function

IE7 is the leader when it comes to printing; gone are the days when the navigation bar was prominent on the printouts but the actual content was cut off. Open the

context menu of the printer in the symbol bar and click on "Print Preview ..." —the "Print Preview" dialog appears. Using the icons on the left on the toolbar, you can switch between the portrait and the landscape format in a split second. The page symbol with two lines connects and separates the header and footer—this is done faster using the "Alt+E" key combination.

Using the first combination field, you can also adjust the preview to display up to 12 pages next to one another in order to know what is going to be printed.

Minimization of web sites: Normally, the command "Shrink to fit" is active in the next combination field; IE fits the content of the web site to the output medium. This option can also be used to size the page using the predetermined percentages that can be freely defined using the "Custom" option. It comes in handy particularly if you want to squeeze the content of the web site on to a single page. In case of one homepage consisting of several pages, it is not possible to reduce their size and print them on one page.

Now how do you adjust the page borders? In the overall preview, the preview displays grippers next to the page. These grippers along with the mouse can be used to adjust the print margins. If required, a "Page Setup" dialog can be accessed through the "Tools" symbol so that you can specify the margins in millimetres. After setting the page to be printed, you can open the usual print dialog of your output device by selecting the "Print" option. ■

Michael Eckstein



Windows Vista™ Beta 2



By Pramod Jadhav

Early next year we might finally get to see a Vista RTM for the desktop. In the meantime, let's take a visual tour of Build 5384

There is enough to read on the Internet about the most awaited (and delayed) operating system, Windows Vista. Many have even downloaded copies of Vista Beta 2 (despite the daunting file size) to get a taste of Microsoft's latest invention. Those who cannot afford the bandwidth have settled for the "Vista Transformation Pack". The final Beta Build 5472 is already available. But from now on only RC (Release Candidate) versions of Vista will appear. We received the "5384" build a few weeks ago and listed out several aspects of this new OS that we'd like to share with you.

This Vista Beta 2 walk-through covers most of the new features that have been incorporated over the year. In addition to the user interface (Aero-glass effect, indexed

search, etc), I shall also throw some light on Vista's desktop and network security (parental control, tighter file sharing).

Most of the features in Vista have been finalized and it will continue to go through revisions. (I came across an "under construction" sign in place of a diagram in the Help library.) The final build is more of a refined version of its predecessors, which is why I will not comment on the performance of this OS.

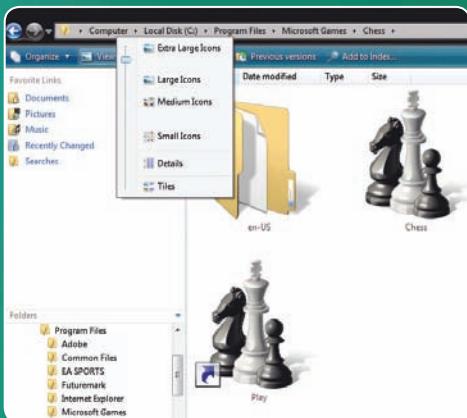
The DVD that is distributed to beta testers and media contains the "Ultimate Edition". This means when Microsoft officially launches Windows Vista, it will do so in a variety of flavors and each flavor will have a subset of the features/applications present in the "Ultimate Edition".

Windows Vista Beta 2 (Ultimate Edition) was installed on:

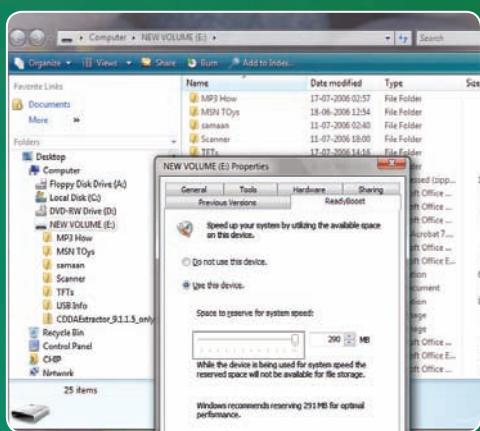
Processor : AMD Athlon 64 X2 4400+
Motherboard : DFI nF4 SLI Infinity
Memory : 1GB DDR400 - Corsair
Graphics : Palit 7600GT (256 MB)
Hard Drive : Western Digital Raptor 740GD
Optical Drive : Sony DVD Writer (DRU-720A)

Windows Vista will be available in six different flavors:

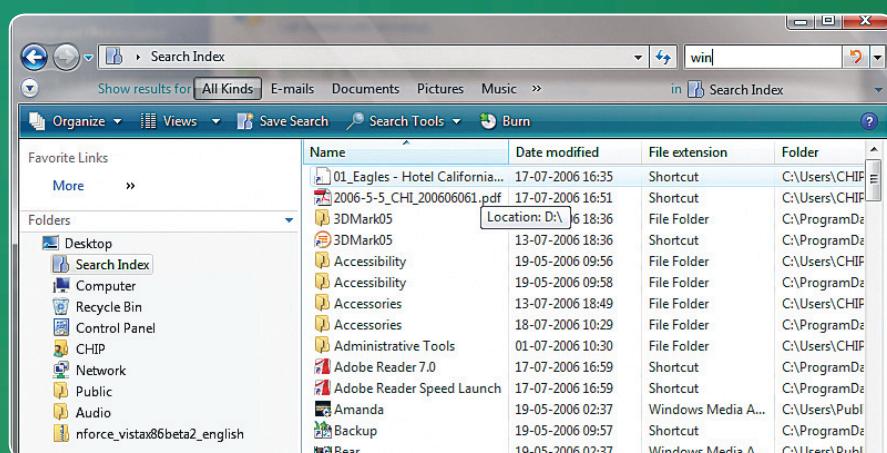
Windows Vista Starter Edition
Windows Vista Home Basic
Windows Vista Home Premium
Windows Vista Business
Windows Vista Enterprise
Windows Vista Ultimate



Windows Explorer's title has a translucent look and icons can be resized to quite an extent. However, all icons do not scale as well as the ones shown above. The address bar has been changed too—making it clickable—allowing one to change the path midway.



ReadyBoost—a feature that allows a user to utilize flash memory to increase system performance. It is used to store prefetched data—normally stored in the page file on the hard drive. This concept is based on the premise that flash memory will be more responsive.

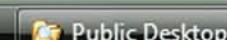


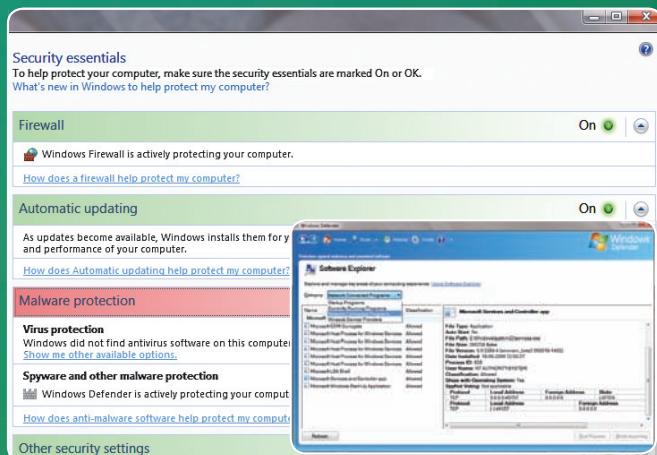
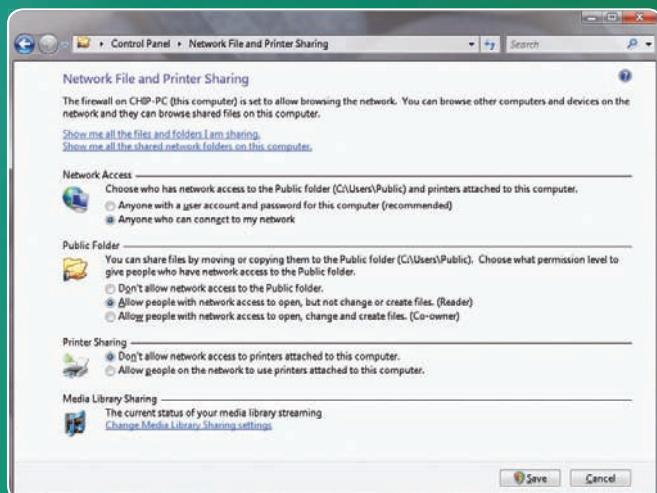
Microsoft has placed its search engine in any place it can. You will find the indexed search functionality in the Start menu, Windows Explorer and Windows Mail—the successor to OE 6. (It is also used extensively in Outlook 2007). Search results are instantaneous and can be narrowed down by simply clicking on the buttons representing different file formats—E-mail, Music, Documents, Pictures, etc.



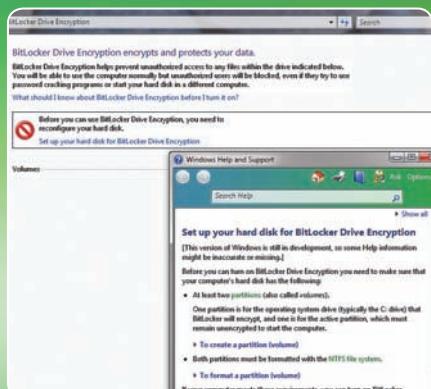
[Alt]+[Tab] yields previews of the all windows in the taskbar. Even the Desktop is shown in the preview. Placing the mouse pointer over a window on the taskbar also produces a preview. It will even play a video in the preview. Pressing [Win]+[Tab] cascades all the windows in 3D—known as Flip 3D (as of now).

Vista's "Gadgets" on the Desktop look slick and are meant to be helpful. The number of gadgets available, by default, are few. Gadgets like Converters, Notes and Timers can also be added. Functionality in some are limited—for example, as of now, only Microsoft and IE Blog Feeds are viewable. These Gadgets can also be "undocked" from this sidebar.





Desktop security can be viewed from Vista's Security Center. This includes the Firewall status, Updates (which has been made simpler), Malware protection (Windows Defender is the anti-spyware program in Vista), Internet Security Settings and User Access Control. ISS is based on the protected mode and anti-phishing filter configured in IE 7+. Defender can be updated regularly from the Microsoft web site. User Access Control prevents non-administrative users from running programs or tasks that are not meant for their profiles.

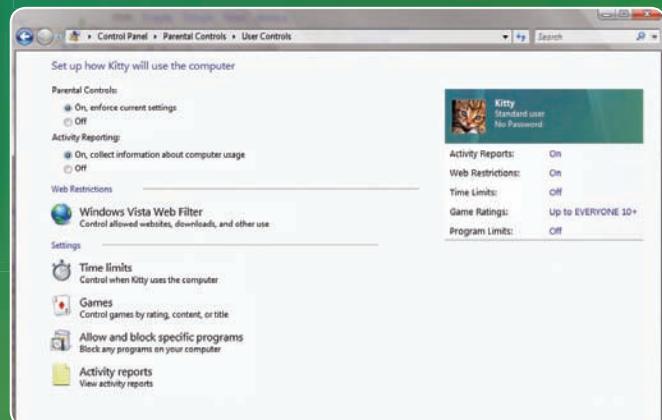


BitLocker Encryption—a feature that is available but still under construction requires two partitions. One is encrypted while the unencrypted one is used to start the system. It prevents the hard drive from being accessed if it is connected to another computer.

Configure who can gain access to your computer from the network. Simple file sharing has been replaced with these stringent settings. A "C:\Users\Public" has been assigned as the place where you should dump files and folders to be shared. This folder can be made accessible only against user accounts created on the PC or to anybody on the network. Settings for streaming of shared media is provided separately here.



Speech recognition allows a user to command the computer without using the mouse or keyboard. Tutorials are also provided to train the computer. I called the Security Center (as shown above). Since two windows figured on the taskbar, they were numbered and flashed in the same color. The command, "One" followed by an "OK" brought up the Security Center window (on the left of the taskbar). Text-to-speech is also provided along with recognition.

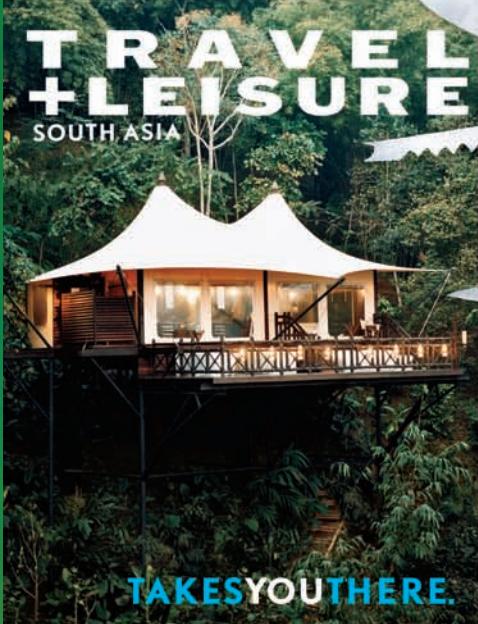


Vista's Parental Control provides a wide range of options that an administrator (or parent) can set for a "Standard User". An administrator can curtail a child's rights to play games with a Mature rating. Web restrictions can also be imposed on the user. All this ties with the User Access Control feature.

Nvidia and ATI have been providing drivers regularly. Games like *Oblivion*, *Doom 3* and *F.E.A.R.* were also installed and they worked well on the DirectX10 powered OS. Drive support for Vista seems to be pretty good—only the audio drivers in our test rig needed to be installed separately. Now comes the tough part of smoothening all the rough edges through this year. We shall keep you updated. ■

Ashutosh Desai

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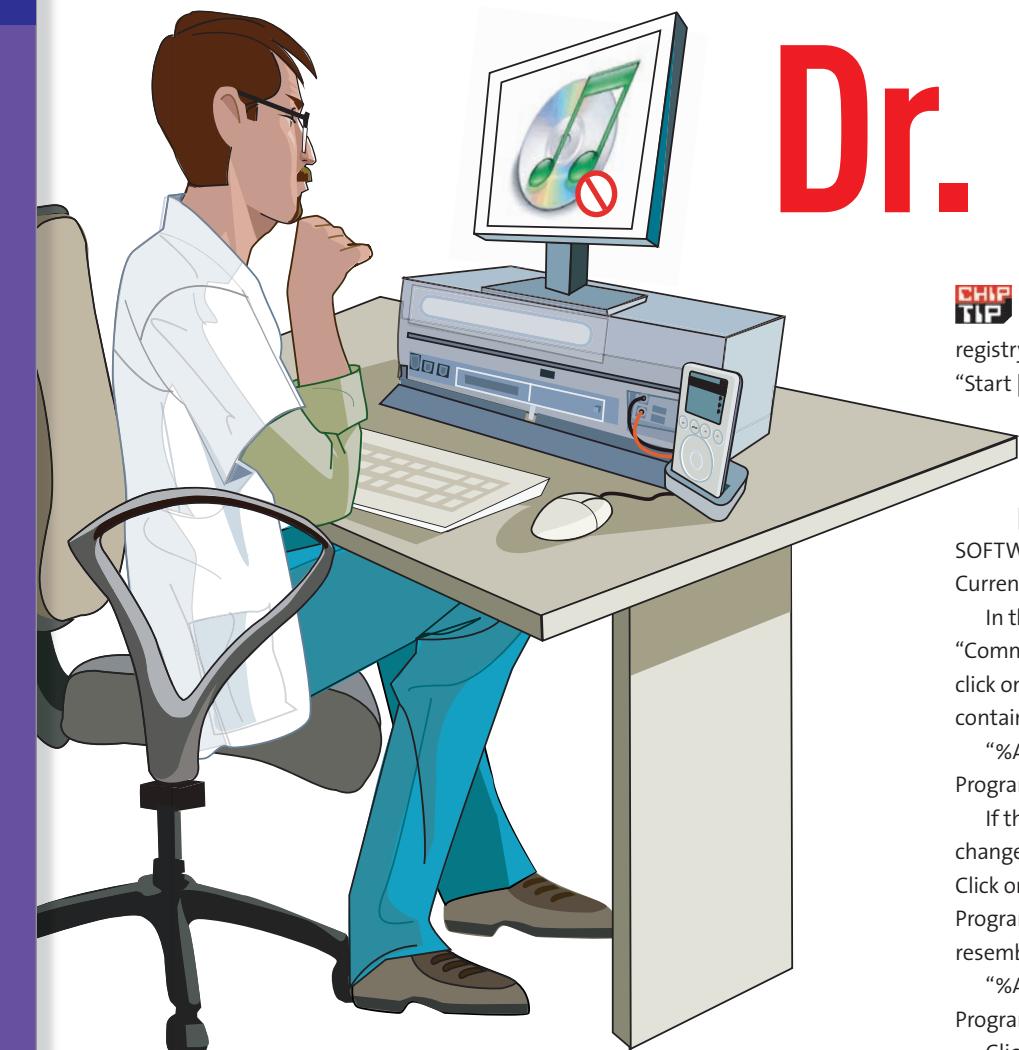
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Dr. CHIP

**CHIP
TIP**

This could be because of a corrupt registry setting or Norton itself. Click on "Start | Run", type "regedit" and click on "OK". This opens the Registry Editor. Go to the following location in the Registry Editor,

[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer\User Shell Folders]

In the right hand side pane, look for "Common Administrative Tools" and double click on it. The "Value data" of this key must contain the following line,

"%ALLUSERSPROFILE%\Start Menu\Programs\Administrative Tools"

If the key contains anything else then change it to the value mentioned above. Click on "OK". Now double click on "Common Programs" and edit the "Value data" field to resemble the following line,

"%ALLUSERSPROFILE%\Start Menu\Programs"

Click on "OK" to save these changes.

Click on "Edit | Find" and enter the following into the "Find what" field

- 55EB66EFB74A75B4D9E26680831FE059

When the search finds this particular "key", hit [Del] to remove it. Start the "Find" dialog box again and continue searching this key in the rest of the registry. Delete this key wherever it is found in the registry. Close the Registry Editor and restart after you have deleted all references to this key. Now try installing Norton.

- Roy

Error 1606

Q> I have been having trouble installing Norton anti-virus on my computer. I keep getting an error message saying it cannot access a network location. As if that were not enough, another message, "Error 1606", appears alongside the previous one. What does this mean? I am not part of any network. The only other software that I have installed on my computer is MSN Messenger.

- Roy

| How to Read the Code

All code lines and commands are written in the following manner:
netsh•int•ip•reset•tcpreset.txt
where the • symbol denotes a space.
Hence, the above code line should be typed as

netsh<space>int<space>ip<space>reset<space>tcpreset<dot>.txt

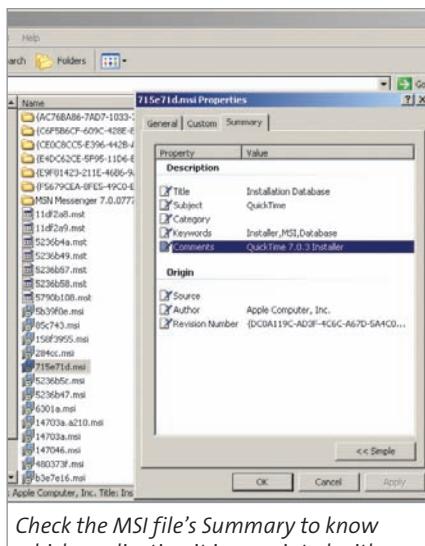
Cannot install Office

Q> I use Windows XP Professional and I have been trying to install Office 2000 on my computer. Unfortunately, I have not been successful so far. The installation does not complete because of an error that says, "This installation package could not be opened". It asks me if the package exists. This is an authentic copy of Microsoft Office! How do I make this installation work on my PC?

- Gurpreet

© Dinesh Desai

CHIP TIP While installing Office, the Windows Installer gets saved onto the hard disk. This installer might be damaged. You will need to delete the MSI (Windows Installer file required for application installation and configuration.) files related to Office 2000 from your system. Open Windows



Check the MSI file's Summary to know which application it is associated with

Explorer and go to the C:\Windows\Installer. Right click on each ".MSI" file and select "Properties". Click on the "Summary" tab and take a look at the comments and origin of the file. If it is related to Office, delete it. After deleting the file, try installing Office again. For those who are facing the same problem and have managed to install Office on the system, click on "Start | Run" and type

X:\Setup.exe /fv Data1.msi

Replace, "X:" with the path to the location of your Office setup files.

You should also download the latest version of Windows Installer from: <http://www.microsoft.com/downloads>. Use "Windows Installer 3.1" as the keywords for your search.

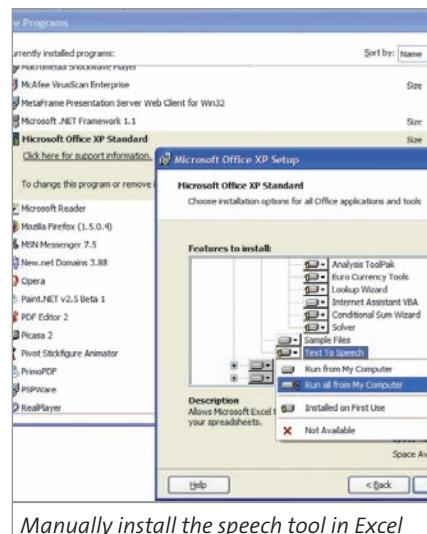
Speech recognition

Q I want to use the speech feature in Office XP but it does not work properly across all its programs. When I tried it in Word, I got a prompt to install the package. When I tried to activate it in Excel, I did not get any prompt. How do I make this feature work in Excel?

- Jayesh

CHIP TIP You can make the speech feature work in Excel by doing the following:

Insert the Office CD into the optical drive and open the Control Panel ("Start | Settings"). Double click on "Add/Remove Programs". Select "MS Office XP" and click on "Change". The Microsoft Office XP Setup dialog box will appear. Click on "Add



Manually install the speech tool in Excel from Add/Remove Programs

or Remove Features" and then on "Next". Next, click on the plus sign next to "Office Shared Features" and then on the arrow near "Alternative User Input". Click on "Run all From My Computer" and then on "Update". Now when you start Excel, you will be able to use the Language feature.

No audio in recording

Q I bought a Compro VideoMate TV Tuner recently to record my VCR tapes on to my computer. After I connected the card, I was able to record a tape from my VCR but without any audio. I am not very comfortable using a TV Tuner card with a VCR. Can you please tell me what could have gone wrong here?

- Ankush

CHIP TIP You should first check if audio on your computer is working right. Play any audio file to test this. If this does not work, check to see if the volume has been muted. Also look for the soundcard within "Sounds and Audio Devices" from the Control Panel. Install the necessary drivers, if needed. If your audio is working alright then you need to check the audio connections between

the TV tuner card and VCR. The VCR's audio output (usually two RCA jacks for left and right channels) needs to be converted to a 3.5 mm stereo input, into the TV tuner card's Line-In. You will need a converter, which has two RCA (female) connectors and ends with a single 3.5 mm stereo (male) cable.

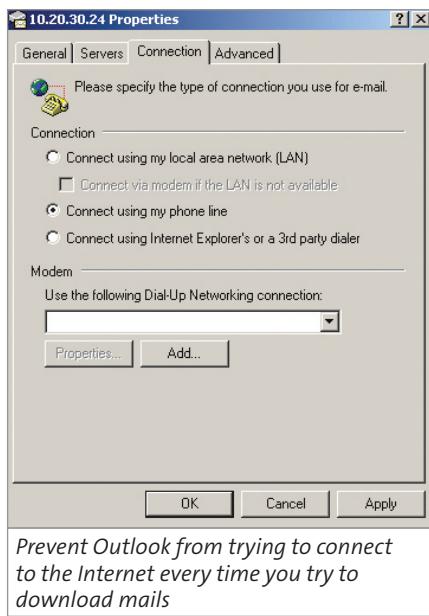
Connect the stereo cable to the Line-In in the TV tuner card and you will be able to record audio and video from your VCR. If you have a good soundcard and want better audio capture then you can connect the audio output of the VCR to its "Line-In". Now, you will have to change the audio source in ComproPVR (the software that you installed with the TV Tuner card) to that of the soundcard. Adjust the recording volume and run a test to make sure everything works out right.

Outlook dial-up

Q I have Windows XP Home Edition installed on my computer and I use Microsoft Outlook as the default e-mail client. I use a dial-up connection but every time I open Outlook to download my mail, I get a dial-up window prompting to connect to the Internet, whereas I am already connected. Does this mean there is a virus in Microsoft Outlook?

- Dhruv

CHIP TIP No, you do not have a virus in Outlook. Your mail client is configured to connect to the Internet via dial-up each time you try to send/receive e-mail. You can disable this from Outlook's account settings. Open Outlook, click on "Tools |



Accounts". Then click on the "Mail" tab and with the account selected, click on "Properties". Click on the "Connections" tab. Select the option that says "Connect using Internet Explorer's or a 3rd party dialer." Click on "Apply" and then on "OK". This will stop the dial-up connection box from popping up every time you send/receive mail.

Real Player Problem

Q I have downloaded and installed the latest version of Real Player, but it refuses to launch. I get an error saying some component is missing. I do not know what this component is. I can watch movies through Media Player Classic as I have installed K-Lite codecs on my computer. But how can I make Real Player work?

- Gaurang

CHIP TIP Real Player might not be playing the video because of a codec conflict with the ones that have already been installed on your computer. You have mentioned you have K-Lite already installed. Uninstall the codec pack and try using Real Player to watch the video files. This should allow the player to load all the necessary files and components required to play the video.

Defragmenter problem

Q I cannot defragment the partitions on my hard drive. I keep getting any error saying there is a problem with an NTFS

CHIP-INDIA KNOW HOW | (www.chip-india.com/knowhow)

VB .NET Query

I have made a "sticky note" software in VB.NET.

- How do I compress it to a "setup.exe" file so that anyone can install the software easily?
- How do I change the main icon of the "EXE" file?
- This application uses 10,000K memory (in the Task Manager). Is this normal?
- I have set "layout location=820,0" so that it appears at the top right hand corner of the screen. Will it appear the same way on all other computer displays?

- techfreak

- Open your "project" in Visual Studio .NET. Right click on the name of your project and select "New Project | Setup and Deployment | Setup

module, and Disk Defragmenter closes. Can I get it to work again or should I install a third party defrag utility?

- Kashyap



You are experiencing this problem due to corruption of data related to the loading of Windows Disk Defragmenter. Run the following commands from the command prompt window (if you want) and clear all the files from the Prefetch folder. Click on "Start | Run" and type the following commands one at a time and click on "OK".

- sfc /purgecache
- sfc /scannow (The system file checker

Wizard". Now add "Primary output and documentation". In the Project Explorer, you will notice your "Setup project name". Right click on it and select "Build". The "Setup Project" will be created.

- On the main form, set the "icon" property as an "Icon file".
- Don't create global variables. Create variables only on demand, i.e. inside the respective function. Also do not create integer if "byte" is sufficient.
- It will appear at the top on all the systems but the horizontal position may vary with screen resolution. There is an option to obtain the screen resolution of the system to set the position accordingly.

Make sure you close all the streams—if you have opened them.

- *ajeesh_online, intelomkar*

might prompt for the Windows CD if it finds any files missing/corrupt. It will replace the files with the ones on the CD.)

- chkdsk c: /r (This is the check disk command. It will take some time to complete.)

Now, in the "Run" dialog box, type "Prefetch" and click on "OK". This will open the Prefetch folder. Now press [Ctrl]+[A] and hit the [Del] key to delete all the files.

Now restart the computer and start Disk Defragmenter.

Nero tracking error

Q I have not been able to burn any CDs

```
C:\WINDOWS\system32\cmd.exe - chkdsk /r
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\ashu>sfc /purgecache
Windows File Protection successfully made the requested change.

C:\Documents and Settings\ashu>sfc /scannow

C:\Documents and Settings\ashu>chkdsk /r
The type of the file system is FAT32.
Cannot lock current drive.

Chkdsk cannot run because the volume is in use by another
process. Would you like to schedule this volume to be
checked the next time the system restarts? (Y/N)
```

Running the "chkdsk" command will require a restart as it will be performed before booting to the desktop

of late because Nero Burning ROM keeps showing some "tracking error". This error occurs in the middle of the burn process, resulting in a wasted CD. Quite a few blank CDs of mine have got wasted because of this recurring error. What is this tracking error and how can I tackle it?

- Jameel

CHIP TIP Try using another CD-writing program to copy information to an optical disc. This way you can eliminate Nero as the culprit. If you still get the tracking error, it could be an issue with poor quality discs or the optical drive. A tracking error (or a focus error) occurs when the lens (in the optical drive) tries to focus on a disc that has small physical aberrations or scratches. Usually the lens is built so as to compensate for such instances but if the disc is slightly warped (a manufacturing defect and difficult to notice with the naked eye) then a focus error might occur. Compensation for scratches on being placed off center are provided with the help of different lens mechanisms but there is a limit to such techniques. Try a different brand of reliable blanks to see if the CDs are causing the problem. If that does not help either, take your optical drive to your hardware guy for a checkup.

Pocket PC sync error

Q I am not able to sync my Pocket PC with Outlook. My Calendar, Contacts and Tasks do not get synchronized at all. How do I make it work as I need to have all this data with me all of the time?

- Darius

CHIP TIP Synchronization is not working because your PC cannot access necessary information. If restarting and syncing the PC does not help then go to "Help" in the Outlook menu and then click on "Detect and Repair". You might receive a warning several times during the synchronization process: "An external application is trying to access email addresses you have stored in Outlook. Do you want to allow this?" This might also occur if you are using an older version of Microsoft ActiveSync (that is 3.6 or earlier) with Outlook. Update your installation of Microsoft ActiveSync to

the latest version from the following URL: www.microsoft.com/windowsmobile/downloads/

MSN winks problem

I get an error while trying to play winks in MSN Messenger. It says, "Cannot play wink at this time. Try another wink". I try another and it does not work either. What do I do?

- Tarun

CHIP TIP You need Macromedia Flash to be able to play wink and dynamic pictures in MSN. Here is a test to check if you have Flash player installed—can you see flash web sites without any problem? If yes, then you have Flash player installed. There could also be a problem with the Flash plugin and MSN Messenger. You may need to reinstall Macromedia Flash Player. Uninstall and reinstall the Flash Player. It is listed as "Shockwave" in Add/Remove Programs. Download and install Macromedia Flash Player from <http://messenger.msn.com/flash/>

If Shockwave doesn't appear in the "Add/Remove Programs" list, then open Internet Explorer. Click on "Tools | Options". On the "General" tab, under "Temporary Internet" files, click on "Settings" and then on "View Objects". A new browser window will open. In the browser window, right click on "Shockwave Flash Object" and then click on "Remove". An error message will appear—click on "OK". Download and install Macromedia Flash Player once again. Your MSN winks will work now.

PC name inaccessible

Q There are two machines in my house. Computer A has Windows XP Home Edition installed while Computer B has XP Professional. Computer A can access Computer B but not vice versa. I get an error saying, "\\\pc name is not accessible. You might not have permission to use this network resource...Access is denied." What can I do to solve this problem? I have tried creating similar username and passwords too but it did not help.

- Sam

CHIP TIP You need to disable a setting

Need a hand with your PC travails? Log on to [www\(chip-india.com/knowhow](http://www(chip-india.com/knowhow)) and post your query. Voila! You're on your way to a glitch-free future.

Info | For Accurate Diagnosis...

1. Mention system specifications.
2. Mention new hardware or software installed recently.
3. Note the error message, including the action or event that triggers the error. For instance, the error message comes up only during startup or shutdown, or when starting a particular application and so on.
4. Mention any changes you've made just before you started getting the error. For instance, have you deleted some files recently or uninstalled some applications?

in the Local Policy of the Windows XP Professional machine. Click on "Start | Settings | Control Panel | Administrative Tools | Local Security Policy". Under Computer Configuration, click on "Windows Settings | Security Settings | Local Policies | Security Options" and double click on "Network access: Do not allow anonymous enumeration of SAM accounts and shares". Change the setting to "Disabled" and click on "OK". Now restart the computer and try accessing the share folder. This is a security setting to prevent anonymous users to access shares on the computer. ■

The advertisement features a banner at the top with the text "IT Administrator" and the website "www qlc in". Below this, there's a photograph of a person wearing a suit and tie, identified as an IT administrator. A pink sticky note is pinned to a board in front of them, containing the following text:
 "This email system works like such a charm. I need to find something to do immediately so I can look busy."
 At the bottom left, there's a logo for "PostMaster" with a checkmark icon. To the right of the logo, the text reads: "Completely hassle-free email is one of the many benefits of PostMaster." At the very bottom, there's a line of text: "For the complete list of productivity benefits of PostMaster, call: 022 - 4095 7766".



● Pramod Jadhav

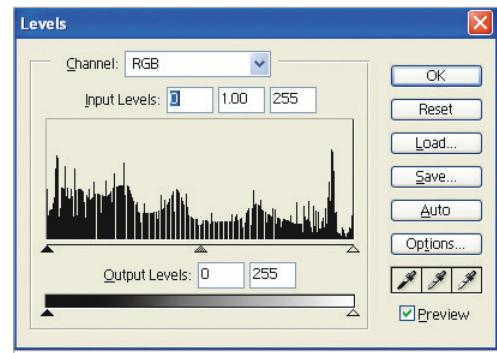
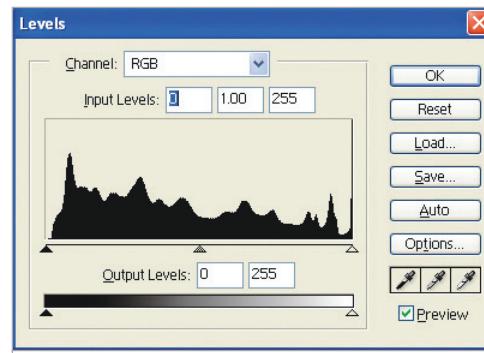
The Magic of RAW

Using a special image mode, you can touch up, reformat, enhance and modify almost any aspect of your photos. Here's how...

With all modern digital cameras, the image you take undergoes some amount of processing before it is stored. After you click an image, a chain of events occur within your digital camera; the camera's light sensing element—the CCD—captures the light information and converts it to an electronic format. It is then processed by the camera depending on the settings you choose (factors like the ISO rating, the image file format, special image processing like sepia, exposure settings, etc are all invoked here). It is this processed image that is finally stored on the flash card inside your camera.

However, if there was a way you could grab the

image as it comes off the CCD and bypass the layers of processing that happens afterward, you'd have plenty of control over the image without it being "tarnished" by the camera's processing. Several cameras today offer the ability to save this source image known as the RAW image. Verify that your camera features this mode by viewing the image file formats supported—along with JPEG, TIFF, you should see the RAW setting in the menu listing. RAW images boast inherently higher quality due to their high dynamic color range, along with the fact that almost every image parameter can be finely controlled using a RAW image editing tool. RAW images are to digital images what negatives



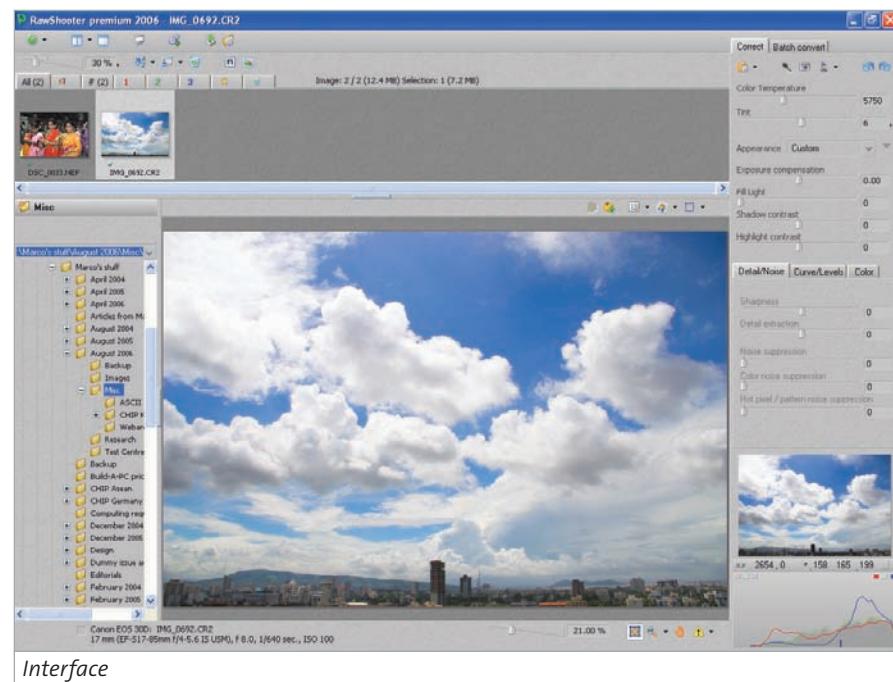
are to print photographs—they contain all the data at the time of shooting, but are left to be processed in any way the user sees fit. All RAW images are tagged with the settings used by the camera at the time of shooting, but you have complete freedom to apply each of these settings in any way you see fit or even discard them altogether! Besides enhancement, RAW images even enable you to diminish the effect of photography errors such as underexposure, overexposure or incorrect ISO choice (image noise). The only disadvantage is that their file sizes are very high—often approaching the megapixel rating of the camera (4 MB for a 4 megapixel camera and so on).

Before working with RAW images, bear in mind that different camera manufacturers encode their RAW images differently, allowing them to be opened only in compatible RAW image viewers. However, there are several imaging tools such as Photoshop CS2, Aperture, RawShooter Premium, etc, which can read and allow control of RAW images from several camera brands.

Clearly, working with RAW images is not for the faint of heart—there are plenty of options you have at your disposal and its quality will only be unleashed if you have a fair idea of your camera's settings and with some knowledge of the fundamentals of photography. Therefore, for this workshop we assume that you are familiar with terms like ISO rating, exposure, f-stops, shutter speed, etc. If not, you might want to brush up on these before plunging into this workshop. If you're ready, buckle up!

What's the difference?

On the surface, you might not perceive any difference between a RAW image and any other. But the differences crop up especially when touching up your images using tools like levels, curves and white balancing—tools that are extensively used to change the color characteristics of digital images. Most digital cameras that store RAW images do so using 12 or 14 bits per color channel (red, green and blue), which is stepped up to 16 bits per channel while saving. However, a JPEG image uses only 8-bits per channel. Therefore, a JPEG image can only contain 256 levels of red, green and blue, while a RAW image can



Interface

contain up to 65,536 levels of red, green and blue. This is indicated well in the two histograms showed here—the first is of an image saved in RAW mode, while the second is of the same image saved in JPEG mode. Both images have gone through a bit of level and color correction. In the second, you will notice evident breaks in the graph, implying sudden transitions in the color range. When viewed or printed, this translates into a patchy effect in fine color gradations (also known as posterisation). Due to its significantly higher color range, this effect will not be seen in a RAW image.

Your digital dark room

In this workshop, we'll be using a powerful RAW image editing software called RAW Shooter Premium 2006 (you can download the free version of this tool from www.pixmantec.com). This application lends subtle control to a range of imaging parameters from which you can extract serious quality from your digital images. First, let's step through the interface:

The RawShooter Interface is divided into discrete panels that contain the image preview, thumbnail, image processing and image viewing control areas. These are indicated in the screenshot:

- The main display area contains the RAW image—it is here that you will see the effects of all the changes you make

on the image.

- The panel on the right contains all the processing parameters you will need for enhancing your RAW photos. Here, you can control image brightness, contrast, including more advanced photo options like color temperature, exposure compensation, shadow and highlight contrast, etc. The three tabs midway through this panel offer tools for Detail enhancement/Noise suppression, Curves/Levels and Color control. Immediately beneath this are the image preview and the histogram.
 - The panel above the image preview is the thumbnail view which displays all RAW images within the selected folder. Note that the application also supports drag-and-drop of RAW images. The buttons above are the thumbnail image view modes, where you can sort, tag or rate them and change their size.
 - The area beneath the image view window displays information about the photo on the left. On the right, you will see a zoom slider that lets you change the magnification level of the image, fit it to the window or pan around it with the hand tool.
- Remember that this program does not make any permanent changes to your RAW image until it is finally converted and saved.

Touching up

In the course of using a digital camera, there are several instances where you would want to recover a dark image (for example, where an incorrect ISO rating was chosen) or enhance select colors within the photo (like the gorgeous red of a sunset). Let's take a look at some such situations where we can use the RAW format to raise our photographs to a higher level.

Enhancing contrast

Classically, the greater the dynamic range of the colors in a photo, the more vivid and vibrant it is. In most cases, your digital image might have a dull undertone that might wash out some of the details. You can correct this using RawShooter by invoking the "Estimate White Balance" tool on the top of the tool panel (Tip: Hold the mouse cursor over any button to see its name and description). Alternatively, in the "Appearance" dropdown box, select from one of the four options and note the effect they have on your image. Under this tool, the four sliders enable the contrast of specific sections of your image to be changed—Exposure compensation for the overall photo's exposure, Fill Light for enhancing details in the mid-tones and darker areas, Shadow contrast for changing contrast in the dark areas and Highlight contrast for changing contrast in the bright areas. If your photos are underexposed (dark), play around with the exposure compensation and white balance to correct it. When you're pleased with the results, you can take a "snapshot" of the corrections made until that point by clicking the first button above the image preview. You can take as many



snapshots of your corrections—a great way to compare the effects of your touchups before deciding on the best.

Enhancing colors

In the photo shown, we have a gorgeous summer sky above a cityscape. By deepening the blue between the clouds, the photo will look much richer. There are three powerful tools you can use for this—start by clicking on the "Color" tab on the tools panel. You will see three sliders along with a color wheel. Saturation is the first slider—drag it to the right to increase the saturation of the overall image. Hue is used to increase the depth of individual colors in the image. The most powerful of these tools is Vibrance—this tool increases the image saturation only in areas of the image that need it, leaving other areas untouched. Try this out on photos with rich backgrounds—the effects are stunning! Also try to use these sliders together and learn how they interact with each other.



Before vibrance and after vibrance

one photo to several others too. Hit "CTRL+C" after selecting the touched up image—this copies all (or partial) changes in that image.



Before and after noise suppression

Saving your work

When it comes to saving your RAW images using RawShooter, you can either do this individually or using the Batch conversion feature. To convert images individually, first select a thumbnail in the strip above the main preview window and click on the Batch convert tab on the right toolbar. Here, you can select various imaging parameters such as the bit depth, image size, format, naming and output location. When you're ready, click on the "Add" button and your touched up image will be saved in the selected format. When working with batches of images, simply select two or more thumbnail images before clicking on the "Add" button.

Before using any of these options, you can apply the series of corrections used in

Next, select two or more images from the toolbar (using CTRL or SHIFT), and hit "CTRL+V". Here, you can select the image corrections you want to paste to the target images. This makes it easy to apply common changes to a large set of RAW images.

It doesn't end here—the more you work with RAW image editing, the more you will notice the sheer quality you can discover from your digital camera. But remember to invest in a larger memory card. ■

| Marco D'Souza



Peripheral Maintenance

Be a tad more persnickety about keeping your printer, scanner or MFD spick and span to ensure durability and superior performance

Spring-cleaning a PC usually means a bit of dust busting and a quick wipe of the cabinet and monitor. But to ensure your computer peripherals such as keyboard & mouse, printer, scanner, MFD function properly, it is important to procedurally clean them. Since we have already discussed keyboard maintenance in an earlier issue, in this workshop, we will stick to keeping your printing equipment in the best condition.

Ideally, peripherals should be hassle free—an install-and-forget device. Unfortunately, it is not as simple as that. A printer is designed in a way that makes it susceptible to elements like dust

and moisture in the air. Its input/output trays are almost forever open—unless you diligently use covers to keep dust away. You need to take more care if your printer is placed under the table. Cleaning multi-function devices is quite a task. Depending on the design, they will either be bulky or really compact—either way they have a knack of harboring dust in places difficult to clean. Printers that have not been used for a while tend to face cartridge jams.

Scanners also need persistent attention. The glass surface tends to get dirty with either dust or fingerprints. Even the underside of the lid needs to be cleaned, as it might leave particles on the glass leading to poor scans. Even though the scanner looks air tight, moisture can cause the underside of the glass to fog over. At times yellow-greenish bands appear in the scans. This usually occurs when the mirrors (off which the bright light reflects whilst scanning) are dirty.

All these problems occur over a period of time if the device is not regularly maintained. Paper jams, leaky cartridges and moisture can eventually lead to a scenario when only your technician can come to the rescue. But such a situation is avoidable if you invest some time in cleaning your printer or scanner regularly.



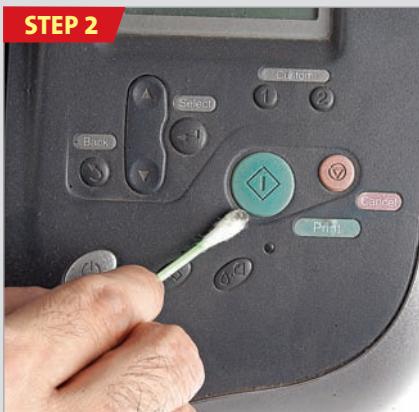
An MFD, a scanner, a thick paintbrush, a cotton ear bud, a soft cloth and a Philips screwdriver

Servicing a Multi-function Device



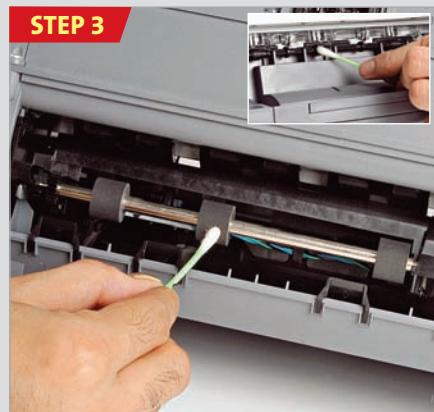
Clear dirt with a thick brush. Tilt the printer while cleaning the paper trays

First, keep the exterior and some of the movable/immovable parts inside the device clean. Disconnect your printer/MFD and lay it on your table. Make sure you have enough space to maneuver around the printer. Keep a soft, lint-free cloth (like the one used to clean spectacles), an oil paint brush and some cotton ear buds. Use the thick brush to first clear away



Cotton ear buds are useful in removing grime from spaces around buttons

dust/cobwebs/grime on and around the printer. Clean the paper trays and crevices where dust is most likely to settle. Tilt the printer a little so as to brush the dust out of the printer easily. If the printer has removable trays, take them off and clean them separately. You can use a damp (not wet) cloth to wipe off the grime. Don't use harsh cleaning liquids like acetone



Use a damp cotton bud to clean the rollers on the input and output trays

or detergent. For stubborn stains on the body, use water mixed with just a drop of mild liquid soap. For areas that cannot be reached with the thick brush, you can use soft a paint brush to remove the dust stuck in and around the buttons. You can also use a slightly damp cotton ear bud to gently clear stubborn debris on the front panel or rollers.



In a compact MFD, remove dirt from the scanner surface with great care

While cleaning rollers (plastic or rubber), always use cotton ear buds only. Rollers that have stubborn stains will need to be removed with a slightly damp cotton bud and a firm hand. A smart way to remove stains or stickers from a printer is by continuously dabbing a damp cotton swab on the area. Eventually, it softens making it easier to clear away.

If you own a compact multi-function device, then the scanner will only be a little glass strip instead of the regular



Don't mistake grease on the metal below the cartridges as dirt

scanner bed. Use a fresh cotton ear bud to gently clear the dust that accumulates on the glass surface. Make sure you don't leave your own fingerprints behind in the process.

Old printer cartridges also tend to get stained—remove them and clear the stains around the nozzle area. To remove the cartridges, you will need to switch the printer on and open the panel. If your cartridges refuse to move, make sure nothing obstructs its movement. Don't

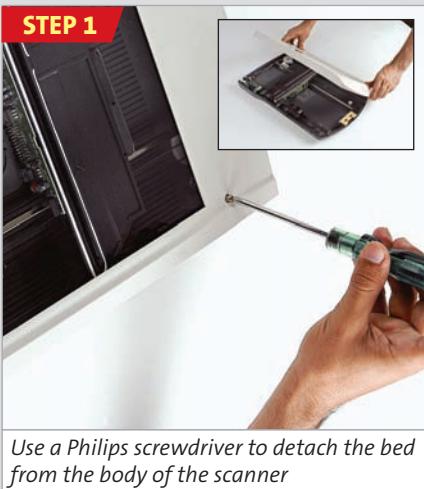


Cartridges move along this metal rod or rail. Old printers might need lubrication

use force to dislodge them. The cartridges move along a rod. It will clearly be visible and has a greasy feel to it. Cartridge jams at times occur due to a dry cartridge rod. Use very little vaseline to form a thin film on the rod.

Use a fresh cotton swab to clean each cartridge. Only clean around the nozzle area. Once this is done, reconnect your printer and run the printer software to re-align the print heads. And you will a smoothly functioning MFD.

Servicing a Scanner



Use a Philips screwdriver to detach the bed from the body of the scanner

The most important step in servicing a flatbed scanner is opening it up and isolating its carriage assembly. Once this is done, the cleaning process doesn't take more than 10 minutes. The method of dismantling is common for most scanners. After lifting the lid of the scanner, pull out the screws holding the bed to the body of the scanner, using a Philips screwdriver. If



Release the carriage rail and free the gear belt from the toothed gear

your scanner has a removable lid, detach the lid before proceeding as it will make your task easier. Now, gently lift the bed of the scanner separating it from the body. The entire mechanism of the scanner will now be visible.

Now you need to free the carriage assembly so that you can turn it over and clean the mirrors at the base. First, release



Free the carriage assembly by sliding out the steel rod beneath it

the steel rod (carriage rail) from its brackets and free the gear belt from the toothed gear near the motor. If the rod is held too tightly by the bracket, you can use a screwdriver as a lever to release it. However, take care not to break the bracket; be gentle. The carriage assembly can now be freed by sliding out the steel rod from it. Avoid touching the lamp while you hold the carriage assembly.



Overtake the carriage assembly and clean the mirrors with a lint-free cloth

When you overturn the carriage assembly, you will notice mirrors at the base. Depending on the type of the mechanism you will find two or three mirrors. These mirrors are placed at angles in a way that the image of the target object is reflected on to the CCD sensor by the final mirror. Now all you need to do is clean the mirrors, lens of the CCD and the glass bed, and re-grease the carriage rail.

To clean the mirrors, use a dry lint-free cloth or tissue paper. With the cloth wrapped



Clean the lens of the CCD with a clean ear bud

around your index finger, gently wipe the mirrors clean. There is no need to dampen the cloth or use any type of solvents to clean the mirrors—doing so might damage them or leave stains or lint behind. It is very crucial that the mirrors are absolutely clean without any stains or dust particles on the surface. The lens of the CCD can be cleaned with a clean and ear bud. With the ear bud held gently, clean the lens using circular motion starting from the center and moving towards the edge.



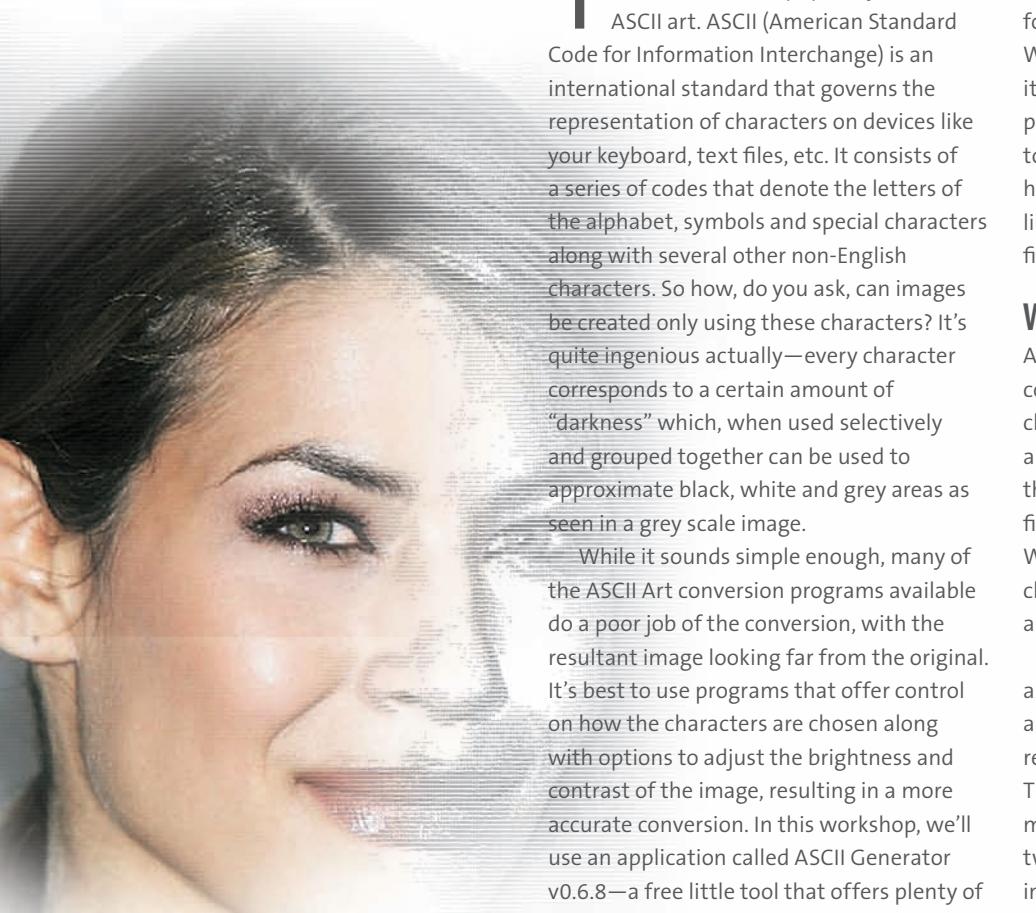
Wipe the inner portion of the bed with a clean cloth to eliminate the fogging

After you're done with cleaning, all that's left is re-fitting the components back into place and re-greasing the carriage rail. A thin coat of vaseline is the best for greasing. Before fitting the bed back, wipe the inner portion of the glass with a clean cloth as it tends to become foggy with dust and moisture over a period of time. You can dampen the cloth if the stains are stubborn. Finally, fasten the bed with screws, fit the lid, and you're done! ■

| Anand Tuliani & Ashutosh Desai

Character Art

Using an ASCII art tool, you can create stunning full-size images using only alphabetic characters and symbols. Here's how...



The process of creating images using text characters is popularly known as ASCII art. ASCII (American Standard Code for Information Interchange) is an international standard that governs the representation of characters on devices like your keyboard, text files, etc. It consists of a series of codes that denote the letters of the alphabet, symbols and special characters along with several other non-English characters. So how, do you ask, can images be created only using these characters? It's quite ingenious actually—every character corresponds to a certain amount of "darkness" which, when used selectively and grouped together can be used to approximate black, white and grey areas as seen in a grey scale image.

While it sounds simple enough, many of the ASCII Art conversion programs available do a poor job of the conversion, with the resultant image looking far from the original. It's best to use programs that offer control on how the characters are chosen along with options to adjust the brightness and contrast of the image, resulting in a more accurate conversion. In this workshop, we'll use an application called ASCII Generator v0.6.8—a free little tool that offers plenty of

options to convert an image file to its ASCII equivalent. It can convert a range of image formats including BMP, GIF, JPEG, TIF, PNG, WMF, etc. Based upon Microsoft .NET (to use it, you'll need to have the .NET Framework package installed on your computer), this tool even generates a real-time view of how your converted ASCII image will look like—excellent for tweaking it to suit the final output to your liking.

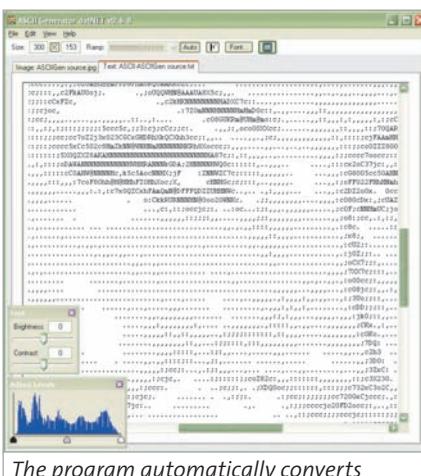
Working the app

After copying the ASCII Gen file to your computer, start the program by simply clicking on it. The main interface consists of a large area on which you can drag and drop the source image file. You can also load the file from the "File | Load Image" menu item. With the file loaded, you can optionally click-drag a rectangle on the picture to define a specific area for conversion.

On the main interface screen, you will also see a little box that contains Brightness and Contrast sliders that let you change the relevant parameters of the source image. The effects are displayed as these sliders are moved. Immediately above the image are two tabs—the one selected will be the source image you are currently viewing.



ASCII Generator dotNET can be used to convert virtually any picture format into an ASCII image file



The program automatically converts the source image into its ASCII art equivalent—that too, on-the-fly

If you click on the tab next to it, you'll see that the output text image is already generated! You might have to maximize the application screen to see a larger part of the image—do this by pressing "F11". You might need to pan around the image to view it completely.

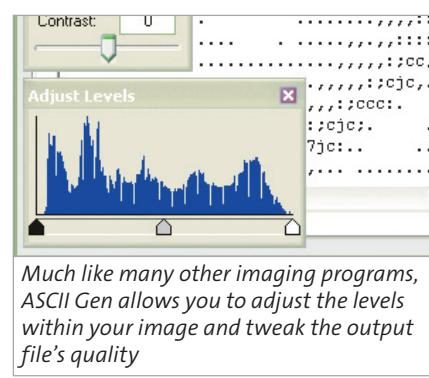
On this screen, you will see two little boxes at the base of the program interface labeled "Text" and "Adjust Levels". The first allows you to modify the brightness and contrast of the text image—you'll see the results of your modifications as you move the sliders. The "Adjust Levels" works in a similar fashion to the Histogram tool in Photoshop, where you can modify the dynamic range of the luminosity in the image, enabling more details in various parts of your ASCII image. There are three sliders at the base of this tool—the left-most is for the shadows of the image (dark areas), the middle slider represents the mid-tones, while the right-most slider represents the Highlights (bright areas). Go ahead and change these and you will see the results reflected in the image. The key is remember to keep as much detail in the image—do this by ensuring that the blue graph fills as much of the Levels box as possible. Play around with the three sliders until you are satisfied with the overall quality of your ASCII image.

You can change the size of the image by keying in new values in the "Size" box on the upper left corner of the interface. I found that 350 characters horizontally (the first text field) works well if you want to print landscape on an A4 page—anything higher and the font will be too small;

anything lower and it will lose out on image detail.

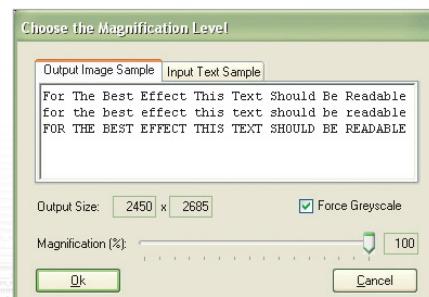
You can change the ASCII image font by clicking on the "Font" button which brings up the Font settings box. I found that the "Courier New" font looks best with most images as it is a standard font on any computer. Experiment with others and see which one you like best.

When you're satisfied with the image, you'll want to either print it or e-mail it. If you want to e-mail it, the best way to do so is to save your ASCII work of art as an image file. Conveniently, this option is offered by ASCII Gen—simple chose "File | Save as an image..." from the menu. You can save your ASCII art in one of several image formats—TIFF or PNG result in lossless images (higher quality), while JPEG is more suited to smaller sizes and easier e-mailing.



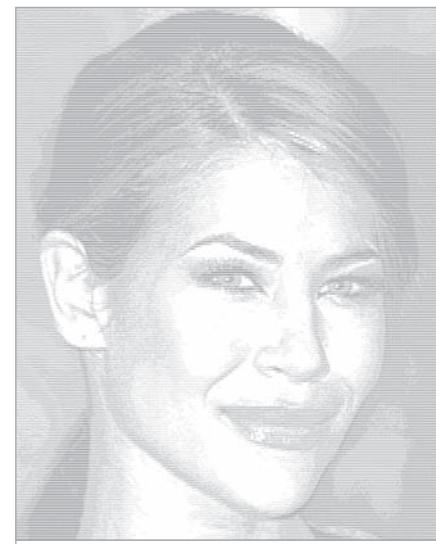
Much like many other imaging programs, ASCII Gen allows you to adjust the levels within your image and tweak the output file's quality

Alternately, if you want to print your ASCII art, I found it best to convert it to a PDF file. This gives you more control over the format and quality of the image compared to a Word document or text file, for example. This is a two-step process—first copy all the ASCII characters from the program by clicking anywhere on the ASCII image and hit "CTRL+A" to select all the characters. Open a new document



After creating the ASCII image, you can directly output it to an image file by optimizing the text size first

in Word and paste these characters into it. With thousands of characters in your ASCII image, the resulting document will span across several pages. Hit "CTRL+A" once again to select all characters in the image and reduce the font size until the entire image fits on a single page (Shortcut: keeping CTRL and SHIFT pressed, use the "<" and ">" key to quickly modify the font size). With all the characters selected, click "Format | Paragraph" and in the "Spacing" section, select Line Spacing to "Multiple". Next to it, enter a number between 1 and 3 (you can also enter decimals like 1.4, etc). Try various values until you are satisfied with the proportion of your image. Now, simply create a PDF file of this document by printing it to PDF format. You can use a free PDF creator such as PDF995



Believe it or not, this image is composed using only keyboard characters!

(www.pdf995.com). By choosing high quality settings, the printout of your work of art will look great! ■

| Marco D'Souza



SMS us! Story code: HWA (See Page 20 for details)



Pramod Jadhav

Signature CDs

Allow others to listen to your music without copying them. Simply hallmark your CDs with copyright protection

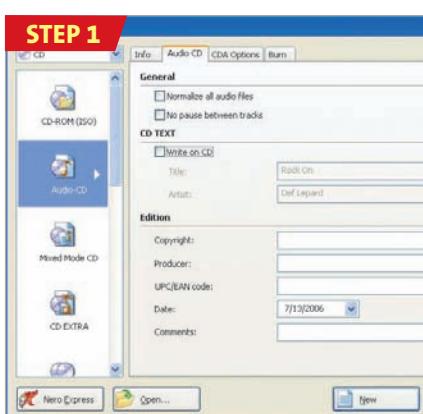
Passive audio CD protection exploits subtle differences between the way computers read CDs and the way ordinary CD players do. By changing the layout of data on the CD, it is sometimes possible to confuse computers without affecting ordinary players—or so the theory goes. In practice, the distinction between computers and CD players is less precise. Older generations of CD copy protection, which relied entirely on passive protection, proved easy to copy in some computers and impossible to play on some CD players. For these reasons, copy protection vendors now use active protection—special software designed to block copying.

You can create your own CD with passive protection by following a straightforward five-step procedure. These steps are described below:

What you need

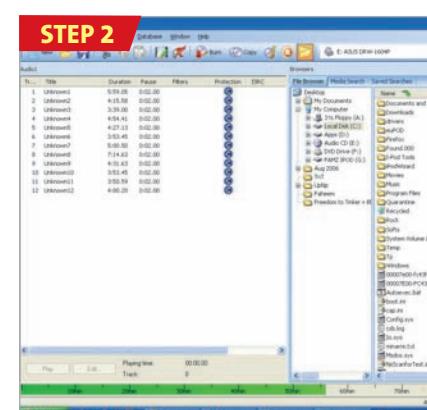
- A computer running a recent version of Windows .
- Nero, a popular CD burning application.
- CloneCD, an advanced disc duplication utility.
- Two blank recordable CDs.

It is recommended to use the latest version of Nero (V 7.0.5.4); you also need an Internet connection.



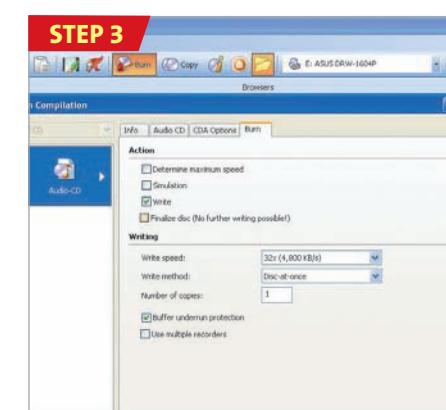
Start Nero Burning ROM and create a new Audio CD project. Add the audio tracks that you want to include on your copy-protected disc (**Step 1**). Nero will start encoding the files you have selected for burning (**Step 2**). When you're ready to record, click on the "Burn" button on the toolbar. In the Burn tab, make sure "Finalize disc" is unchecked (**Step 3**). Finalizing the CD will not allow you to burn anything in future. Insert a blank CD and click on "Burn". Note that you don't want to infringe any copyrights.

In the data session mode, you can add



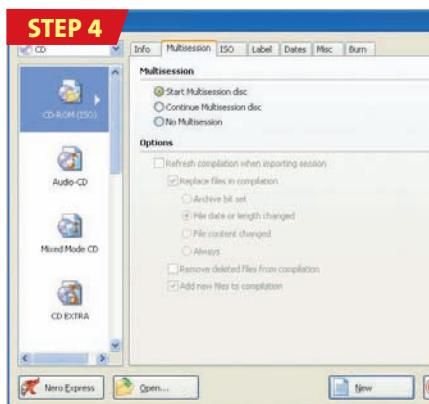
any file or folder such as documents and video files; these files will only be visible on a computer after you finish writing the CD. The aim of this step is to create a CD which has both data and audio files and to make the data files visible and capable of copying but restrict the audio files from being copied (**Step 4**). After you have completed all the steps, the audio files will play only on a standard audio player or any MP3 player that supports audio CDs.

Start another Nero compilation, this time by selecting the "CD-ROM ISO" project type. As shown in the following



screenshots, we will use Clone CD to rip this ISO file that will be burned onto this CD. In the "Multi-session" tab, make sure "Start Multisession disc" is selected, and in the ISO tab, make sure "Data Mode" is set to "Mode 2/XA" (**Step 5**). Add any file that you want to make accessible when the CD is inserted into the computer. You may also include "bonus" content such as album art and lyrics.

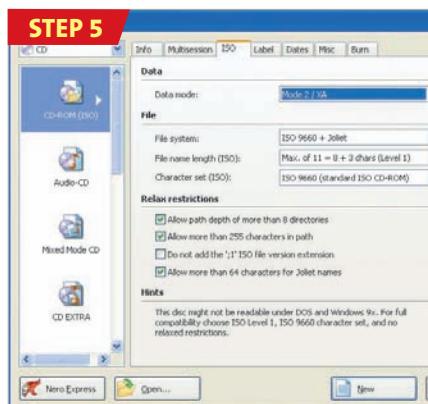
When you're finished, click on the "Burn" toolbar button. Insert the audio CD you created in Step 1 and click on "Burn". Nero should warn you that the disc you've



inserted is not empty; click on "Yes" and this will add your data files as a second session.

CloneCD is used to rip (read) the CD; burn it using the ISO file option. Don't eject the CD after you have completed burning as the same CD will be used for ripping the audio files by CloneCD.

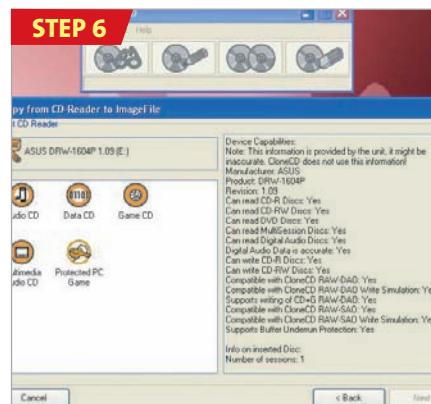
Start CloneCD. Click on the "Read to Image File" button. Select your drive and click on "Next" (**Step 6**). Choose "Multimedia Audio CD" and then click on "Next". Select an easy to find location for



the image file and click on "OK" to begin ripping. Modify the image file to add passive protection.

The CloneCD image you created actually consists of three files ending in .CCD, .IMG, and .SUB. The .CCD file describes the layout of the tracks and sessions on the CD.

Open the .CCD file in Notepad and copy and paste the .CCD file details on this site <http://www.cs.princeton.edu/~jhalderm/blog/passive/>. Then click on "Upload". Copy the output from the web page and paste it back into Notepad, replacing the original

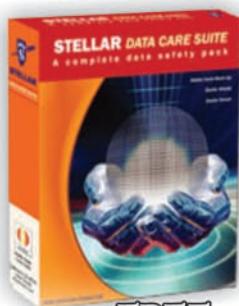


file. Insert a blank CD and start CloneCD again. Click on the "Write From Image File" button. Select the image file you modified and click on "Next". Select "Multimedia Audio CD" and burn it. The data files you have burned will be visible on your computer while the audio files (which can't be displayed on your PC) can be played on a standard CD player.

So there you are, ready with a signature collection of copyright CDs. Now let others beg, borrow but not copy! ■

| Faheem Sayed

Think more seriously about protecting your data before you actually lose it.



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Umesh Dahiwalker

Tips & Tricks

AUGUST 2006

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Tip of the month | Windows XP

Chuckng unread e-mail counter

How do I get rid of the unread e-mail counter from the Windows XP login screen?

CHIP TIP

To get rid of the unread e-mail counter from the login screen, follow these steps:

- Go to "Start menu | Run" and type "Regedit" in the "Run" dialog box and click on the "OK" button.
- When the "Registry Editor" launches, navigate to "HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\UnreadMail".
- Create a new DWORD (right click on the right hand pane, "New | DWORD") called "MessageExpiryDays".
- Double click on the DWORD "MessageExpiryDays" you just created and make sure the value is set to "0" (which should be the default value if this is a new DWORD).

This change will affect all the user accounts.

However, if you have multiple user accounts and you only wish to make a change to your own user account, edit this registry key instead: HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\UnreadMail.

Windows

1 | Windows XP

Disabling the splash screen

When Windows XP boots, it displays its own splash screen that prevents me from viewing the details of the bootup process. Is there any way by which I can disable this splash screen?

CHIP TIP The splash screen that you normally see during the bootup process hides details such as what files are loaded as the computer boots, what version of Windows XP you currently have, information about



1 You can edit the system startup parameters to disable the splash screen

the system data, file system check, and lots more. You may want to view this information out of curiosity or for troubleshooting bootup problems. To disable the splash screen in Windows XP, follow these steps:

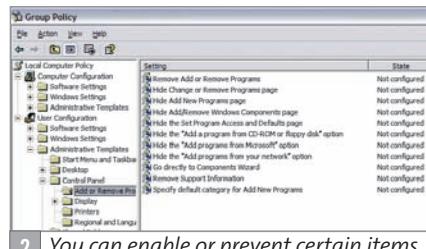
- Right click on "My Computer" and then click on "Properties".
- Click on the "Advanced" tab and then click on the "Settings" button under "Startup and Recovery".
- In the "System Startup" area, click on "Edit".
- After the /fastdetect entry under [operating systems], add a space and /SOS.
- It should look something like this, although systems vary:
[boot loader]
timeout=3
default=multi(0)disk(0)rdisk(0)partition(1)\WINDOWS
[operating systems]
multi(0)disk(0)rdisk(0)partition(1)\WINDOWS= "Microsoft Windows XP Professional" /fastdetect /SOS
- Then click on "File" and "Save".
- Click on "OK" to apply the settings and close the System Properties dialog box.
- Restart the computer and the flash screen will be gone.

2 | Windows XP

Changing the Control Panel

Is there any way by which I can remove applets, hide items, hide specific tabs or make the Control Panel completely off limits to certain users of my computer?

CHIP TIP You can take control of the Control Panel by using the Group Policy Editor. You can prohibit access to the Control Panel, hide or show only certain Control Panel applets and even force the Classic Control Panel style. Exploring further, you can completely personalize the Display



2 You can enable or prevent certain items from being displayed in the control panel

Properties dialog box by hiding specific items such as the Desktop tab, the Appearance and Themes tab, the Screen Saver tab, and more. To make changes to the Control Panel follow these steps:

- Click on "Start" and then "Run".
- Type gpedit.msc
- Expand "User Configuration" and then double click on "Administrative Templates".
- Now click on "Control Panel". The Control Panel options will appear on the right pane.
- To enable any option, just double click on it and choose "Enable". To disable it, just choose "Disable".
- Under the Control Panel options, select "Display".
- Double click on "Remove Display from Control Panel" and in the dialog box, choose "Enabled". Click on "OK".
- Close the Group Policy Editor.

3 | Windows XP

Encrypting files or folders

Can I encrypt my files or folders in Windows XP without using any software?

CHIP TIP Yes, you can encrypt your files or folders in Windows XP without using any third party software. However, the

encryption can be performed only on NTFS volumes. Encryption is achieved by applying an algorithm and only the person with the correct "key" can unlock the code. This is all done in the background and has no effect on a computer's performance. You can copy and move encrypted files just as you would any other files.

The only problem you'll encounter is if you copy or move an encrypted file or folder to a non-NTFS volume. If this happens, encryption will be lost. To encrypt a file or folder:

- Double click on "My Computer" and navigate to the file or the folder that needs to be encrypted.
- Right click on it and then click on "Properties".
- On the "General" tab, click on "Advanced". In the "Advanced Attributes" dialog box, check "Encrypt Contents to Secure Data" and click on "OK". Click on "OK" twice to close the dialog boxes.

4 | Windows XP

Booting off a Live CD

I have a Windows XP-based desktop PC with a single hard drive and an optical drive. Is there a way I can recover my data on the install partition if I am not able to boot into the OS for any reason?

CHIP TIP Often you must have come across a situation when you need to take the hard drive to a friend's place, set it up and copy the data to a free drive or partition. Instead of doing this, you have the alternative solution of using a Linux Live CD. Knoppix is one of the excellent Live CD based distributions. A Live CD is basically an entire operating system that boots off a CD/DVD media and does not need to be installed on the hard drive.

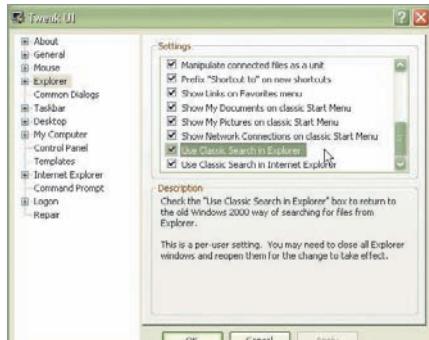
- Download a copy from <http://www.knoppix.org/>. You can boot off the Live CD and many Linux distributions will be able to mount the Windows partitions, be it FAT32 or NTFS.
- Copy your important data to a CD/DVD (provided you have a CD/DVD writer) and even a thumb drive or any other partition on your hard drive (provided you have enough free space).

5 | Windows XP

Reverting to the Windows-2000 search window

How can I revert to the good old search window in Windows XP that I used in Windows 2000?

CHIP TIP The search window in Windows XP slows down your system heavily. To go back to the good old Windows 2000-style search window, all you need is Tweak UI that gives you access to system settings that are not exposed in the Windows XP default user interface, including mouse settings, Explorer settings, taskbar settings, and more. Then follow the steps below:



5 You can revert to the classic search if you don't like the search wizard

Download and install Tweak UI from <http://download.microsoft.com/download/whistler/Install/2/WXP/EN-US/TweakUiPowerToySetup.exe>

- Install TweakUI.
- Run TweakUI.
- Go to the Explorer sub-menu. In the details pane, find "Use Classic Search in Explorer" and select it.
- Click on "Apply" and then on "OK".

Applications

6 | Microsoft Excel 2003

Switching worksheets

I use Microsoft Excel 2003 quite often in my office. I need to regularly switch my focus between different worksheets in a Microsoft Excel 2003 workbook. As a result, I have to frequently use the mouse to click on different tabs. Are there any keyboard shortcuts available for the same that would simplify my work and make it much easier for me?

CHIP TIP Yes, there are two shortcuts available

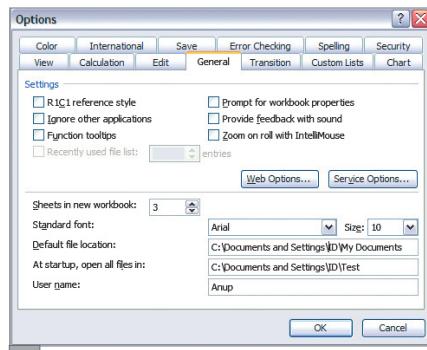
that will help you easily switch over from one worksheet to another. They are:

- CONTROL+PAGE DOWN - Switch to the next worksheet.
- CONTROL+PAGE UP - Switch to the previous worksheet.

7 | Microsoft Excel 2003

Opening multiple files automatically

How can I configure Microsoft Excel 2003 to automatically open several files as soon as I run the application?



7 You can configure Excel to open multiple files automatically at startup

CHIP TIP If, when using Excel 2003, you commonly work on a certain group of files, then you can place these files in their own directory and then have Excel 2003 automatically open them whenever you start the software. This can save you a lot of time since you won't have to manually find and open each file separately. The steps are as follows:

- Use Windows Explorer to move the files to a directory of your choice.
- Click on "Tools" and then on "Options".
- When the "Options" multi-tabbed dialog box opens, click on the "General" tab.
- Next go to "At startup, open all files in" and enter your desired directory.
- Click on "OK" to close the dialog box.

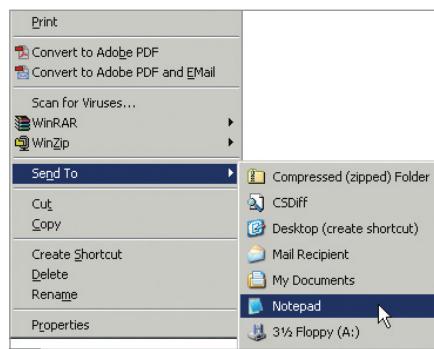
8 | Notepad

Opening files in Notepad

How can I send files to Notepad for quick editing?

CHIP TIP To send the files to Notepad, follow the steps below:

- Go to %SystemDrive%\documents and settings%\username%\sendto (or \Windows\SendTo in Win9X).



8 Add the "Notepad" option to the "Send To" list in the context menu

- Right click on the right hand panel and select "New | Shortcut"
- Create a new shortcut to Notepad.exe in the sendto folder.

Now if you right click on any REG, TXT, VBS, CMD, DAT, NFO file, you can choose the "Send To" menu and send the file to Notepad which will immediately open it for editing.

9 | Microsoft Word 2003

Adding white space

How do I add white space to Microsoft Word 2003 lists and make them more readable?

CHIP TIP Are you in the middle of writing a numbered or bulleted list and want to insert a blank line to make the list more readable? If you press ENTER, you just add another list item. If you press ENTER twice, your cursor will move out of the list, which is not what you want.

Instead, do the following while you are in the middle of typing a list:

- Press "SHIFT+ENTER" and your cursor will stay in the list and move down a line without inserting another bullet or number.
- Press ENTER and a new bullet or number will form. This can be useful in case your lists contain items that extend up to a couple of sentences, as blank lines between items may make your lists more readable.

10 | Microsoft Word

Visiting hyperlinks

When I want to visit any hyperlink, I have to keep [CTRL] pressed and then click on it. How do I directly visit the link without pressing the [CTRL] key?



10 You don't have to press the "CTRL" key when you click on a hyperlink

CHIP TIP Whenever you want to visit a hyperlink using Microsoft Word 2003, you cannot click on the hyperlink. Instead, you must hold down the CTRL key while clicking on the hyperlink.

This is for your protection. Microsoft Word 2003 keeps you from accidentally visiting web sites that you don't want to visit linked in documents, plus it keeps you from editing a document and accidentally jumping on to a different section. However, you may want to disable this setting so just clicking on a hyperlink views its destination without requiring the CTRL key.

- Select "Tools" and then "Options".
- When the "Options" multi-tabbed dialog-box appears, click on the "Edit" tab.
- Uncheck "Use CTRL + Click to follow hyperlink".
- Press "OK" to close the dialog box.

11 Windows Media Player 10

Enabling WMP10 to automatically rip CDs

How do I configure Windows Media Player 10 to automatically rip CDs?

CHIP TIP Windows Media Player 10 can be configured to automatically rip a CD the moment you insert it into your computer's CD-ROM drive. It can also eject CDs once the ripping is done. The steps are as follows:

- Right click on the Windows Media Player title bar.
- Click on "Tools" and then on "Options".
- When the "Options" multi-tabbed dialog box appears, select the "Rip Music" tab.
- Check "Rip CD when inserted".

- Check "Eject CD when ripping is complete".
- Click on "OK" to close the dialog box.

12 | Windows Media Player 10

Turning off video acceleration

My system is quite old. I use Windows Media Player 10 to play most of the audio as well as video files. But sometimes the player doesn't display video while playing. Can you suggest how I can solve this problem?

CHIP TIP While playing video files with WMP 10, your machine may not be able to display the video using all possible video acceleration techniques. Turning off video acceleration may allow your machine to display video correctly.

- Press "CONTROL-1" to switch to full mode if you are in the skin mode.
- Press "CONTROL-M" to turn on the menu bar.
- Click on "Tools" and then on "Options".
- When the "Options" multi-tabbed dialog box opens, select "Performance".
- Underneath "Video Acceleration", move the slider from "Full" to "None".
- Click on "OK" to close the dialog box.

13 | Microsoft PowerPoint

Changing case types

How do I change case type from a file that has already been written and saved?

CHIP TIP In order to switch from caps to lower case or vice versa quickly in PowerPoint:

- Select the text, and then click on "Shift+F3" until it changes to the case style that you like. Clicking on "Shift+F3" toggles the text case between all caps, lower case, and initial capital styles. You'll be surprised how often you use this once you get the hang of it!

14 | Microsoft PowerPoint

Preview slide show effects

Can I preview my PowerPoint slides without actually going to the presentation window?

CHIP TIP While editing a presentation, hold down the CTRL key while clicking on the slide show view button; this will open a



14 The preview of the slideshow on the left hand side of the PowerPoint window

tiny preview window showing that slide in the slide show mode.

15 | Microsoft PowerPoint

Take a break during a PowerPoint slide show

Can I put a presentation in standby mode without actually starting the presentation from scratch when I resume again?

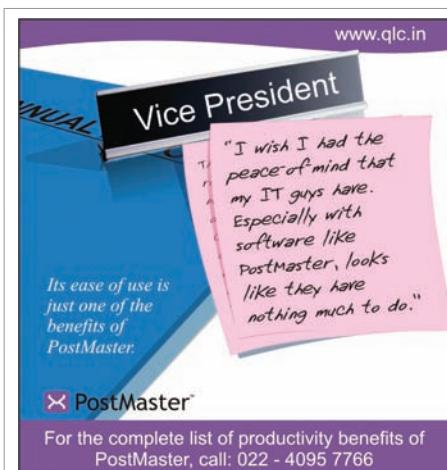
CHIP TIP Here's an easy yet very useful tip for those who give presentations using PowerPoint slide shows.

When you take a break in your slide show presentation, just press the lowercase B key or the PERIOD (.). This will make the screen go black, and if it is a self-running presentation, it will pause. When you are ready to resume the show, press either key again and you will start exactly where you left off.

16 | Adobe Photoshop CS

Selecting highlights

Every time I try to select the part of a photograph with highest concentration of

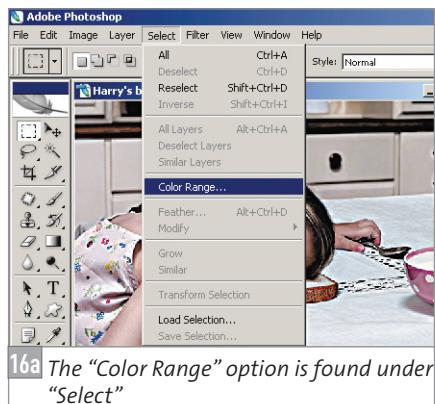


light, I get a sharp edged selection. How can I get rid of this problem?

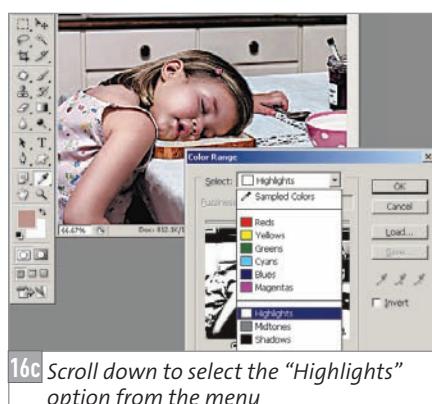
CHIP TIP The sections of a photograph with highest light concentration are collectively known as "Highlights". It is difficult to select Highlights with the selection tools and still not have sharp edges. However, a different selection technique known as "Color Range" helps to solve this problem.

To select follow the steps:

- Open an image and click on "Select | Color Range" on the menu bar.
- Once the color range window pops up, click on the dropdown menu - "Select".
- Scroll down to "Highlights" and click on it. Just below the dropdown list, you will see a preview of the image. Further down, you will see two radio buttons named "Selection" and "Image".
- Now click on the "Selection" radio button. This will allow you to see your selection in black and white. Remember all the white areas are the selected areas and all the black areas are the non-selected areas.
- Once you have checked your selection



16a The "Color Range" option is found under "Select"



16c Scroll down to select the "Highlights" option from the menu



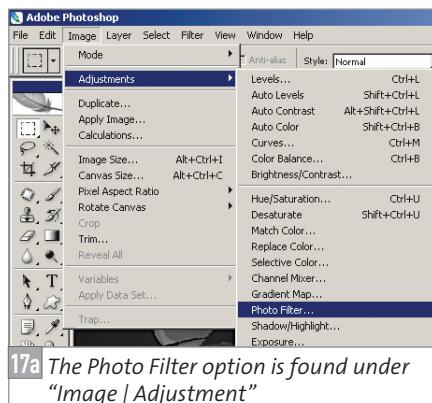
16d Click on the "Selection" radio button to see your image area in black and white

in black and white, click on "OK". And the highlight areas of the image are selected.

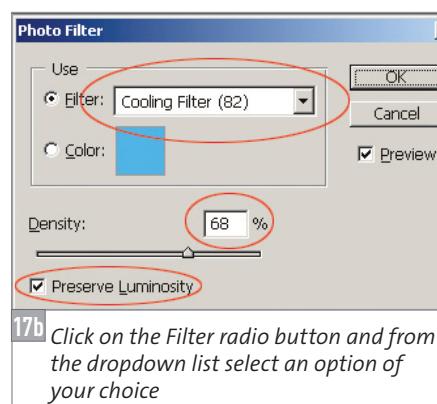
17 | Adobe Photoshop CS Adding blue filter effect

How do I create a blue filter effect on an image using Photoshop?

CHIP TIP To get a blue filter effect on an image, you need to first work with a grayscale image. So in case of colored images, convert them into grayscale first. Then follow these steps. (Note: If you are not working with a colored image, rule out



16b The "Selection" dropdown menu is located at the top of the window



17b Click on the Filter radio button and from the dropdown list select an option of your choice

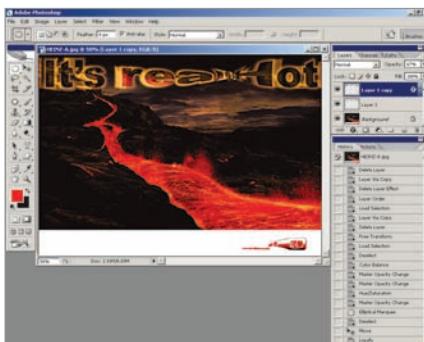
the first step but don't forget to check the color mode of the image—it should either be CMYK or RGB.)

- Select the key combination by pressing "Shift+Ctrl+U" to convert the color image to grayscale.
- On the menu bar, click on "Image | Adjustment | Photo Filter". In the Photo Filter window, you will see two radio buttons, "Filter" and "Color".
- If you want to use your own choice of color, click on the "Color" radio button otherwise click on "Filter". The Filter option has a dropdown list with a set of predefined color filter options. Clicking on it will give you three blue filter options.
- Scroll down and select one of them; we chose Cooling Filter (82). Keep the density around 60-70 percent.
- Check the "Preserve Luminosity" option.
- Click on "OK" and you get your desired effect.

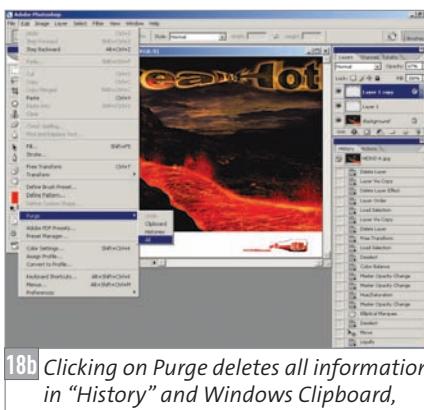
18 | Adobe Photoshop CS Saving effects in artwork

At times, while working with Photoshop, the application hangs; particularly when I am about to save my artwork after applying a number of effects. On restarting, the effects can't be retrieved. Is there any way I can work with Photoshop and not encounter the problem?

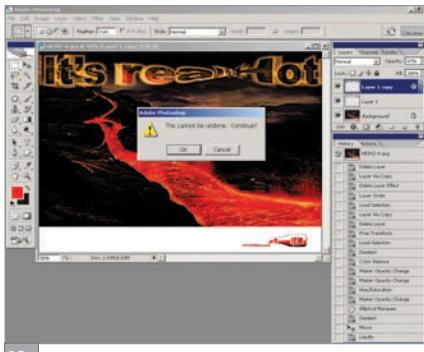
CHIP TIP First of all, you need to check your computer's RAM. Adobe recommends 512 MB of RAM while working on Photoshop CS. After applying a range of effects and while trying to save, your artwork might hang. If you have 512 of RAM and the problem still



18a Click on the "History" palette to check the several functions performed



18b Clicking on Purge deletes all information in "History" and Windows Clipboard, and clears the RAM



18c Run a check on the steps before purging as this function can't be undone

persists, then follow the steps (we used a high-resolution image with 1200x849 pixels. On the image, we created two layers, applied certain effects and on both the layers we applied the "Liquify" filter):

- Click on "Edit | Purge | All". A confirmation window will pop up.
- Click on "OK". You will notice all the stored information in the History palette is deleted barring the last one; this clears some information from the RAM and allows you to save your file. This will retain your effects but will not allow to undo any of the previous steps for modifying. Therefore before purging,

be sure you don't want to modify any of the effects you have applied earlier.

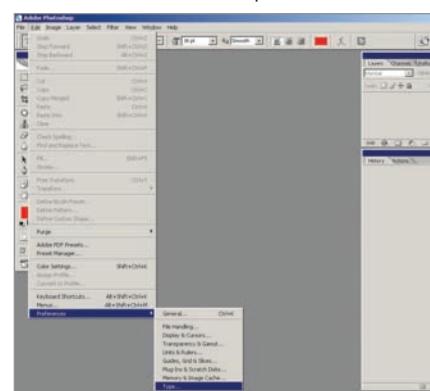
- Now go ahead and save your file. Photoshop will not hang while saving this time.

19 | Adobe Photoshop CS

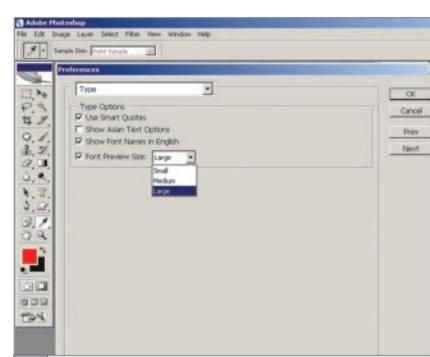
Increasing sample size

Is there any way I can increase the size of the samples shown in the Font dropdown list?

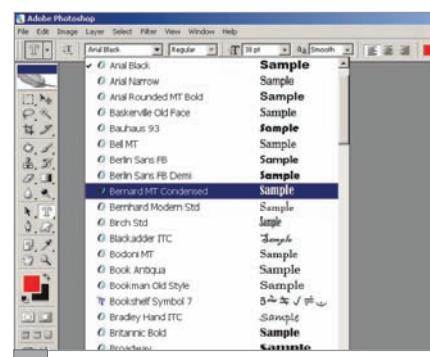
CHIP TIP If your monitor is set at a very high resolution, then the samples size of the



19a Click on "Type" from the sub-options in "Preference"



19b Select the option "Large" from the dropdown list of "Font / Preview / Size"



19c Click on the type tool option and preview it in a size bigger than before

font will be small. If you don't want to change the monitor resolution yet want bigger sample size for the fonts, then perform the following steps:

- On the menu bar, click on "Edit | Preference | Type". This will open the Preference window for changing font and type preferences.
- Check the option "Font Preview Size" and from the dropdown list, select "Large".
- Now if you select the "Type" tool and click on "Options" at the top to have a preview of the font, you will find them big enough.

Internet and Communication

20 | Microsoft Outlook

Blocking attachments

I am using Microsoft Outlook as an e-mail client and would like to block certain attachment types. How can I do that?

CHIP TIP You need to perform the following steps to block certain file extensions:

- Click on "Start | Run", type "regedit", and then click on "OK".
- Locate and then click on the following key in the registry: HKEY_CURRENT_USER\Software\Microsoft\Office\11.0\Outlook\Security
- On the Edit menu, point to New, and then click on "String Value".
- Type Level1Add, and then press "ENTER".
- On the Edit menu, click on "Modify".
- Type <file_name_extensions>, and then click on "OK".

File_name_extensions is a list of the attachment file name extensions and each attachment is separated by a semicolon.

21 | Internet Explorer

Adding Command Prompt option

How can I add a Command Prompt option to the default Explorer right-click on the context menu?

CHIP TIP If you find that you frequently open a Command Prompt window and change to a specific directory, you can add the Command Prompt to your shortcut menu. This option enables you to right-click on a folder within Windows Explorer and

choose the Command Prompt, which opens a Command Prompt window with that folder as your active directory.

To add the Command Prompt option to the default right-click context menu in Windows Explorer, do the following:

- Navigate in your Registry to HKEY_LOCAL_MACHINE/Software/Classes/Folder/Shell and create a key called "Command Prompt" without the quotes.
- Set the default string to whatever text you want to appear in the right-click menu.
- Create a new key within your newly created command prompt named "Command," and set the default string to Cmd.exe /k pushd %L You may need to add %SystemRoot% before the Cmd.exe if the executable can't be found.
- The changes take place immediately. Right click on a folder and your new menu item will appear.

Note: You can do the same for Windows 98. Type in "c:\windows\command.com /k pushd %L" (without the quotes).

22 | Internet Explorer

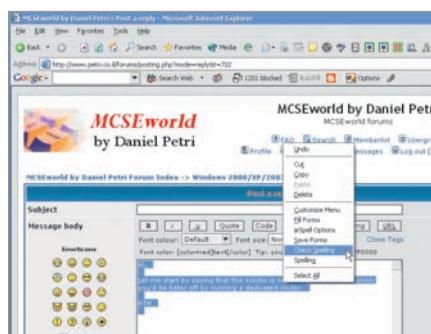
Running spell check

How can I spell-check text within Internet Explorer?

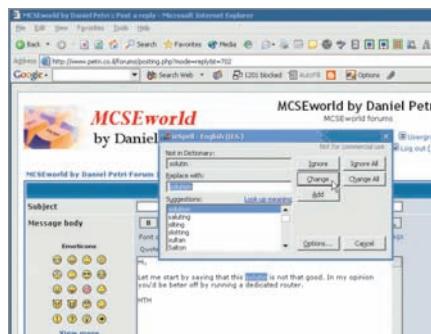
CHIP TIP There are times when you need to perform spell-check operations within an Internet Explorer window. These may include the following:

- a) Entering feedback and responses in online forms;
- b) posting messages on bulletin boards, blogs and forums and
- c) performing free-text searches in search engines and more.

ieSpell is a free Internet Explorer browser extension that spell checks text input boxes on a web page. It should come in particularly handy for users who do a lot of web-based text entry (for example, web mails, forums, blogs, diaries, etc). Even if your web application already includes spell-check functionality, you might still want to install this utility because it is much faster than a server-side solution. Plus you get to store and use your personal word list across all your applications, instead of maintaining



22a Get rid of unwanted spelling mistakes by adding spell check to Internet Explorer



22b ieSpell works just like spell check in Microsoft Word

separate ones on each application.

The program installs as a new button in the IE toolbar (as well as a new menu item under "Tools").

- After filling in a form, just hit the ieSpell button and it pops up a dialog, similar to the MS Word spell check.

The current version is v2.0.1 (build 325).

You can go to <http://download.com> and navigate to "Browsers | Internet Explorer Add-ons".

23 | Web Browser

Firefox security

I am paranoid about the security of my computer and I understand that enabling Java and JavaScript in browsers have security considerations. Is it possible to selectively block web sites with Java and JavaScript in them?

CHIP TIP If you use Firefox as your default browser, there is an extension that can be installed in it known as NoScript. NoScript provides extra protection for your Mozilla/Firefox browser. This extension allows JavaScript and Java execution only for trusted domains of your choice (for example, your home-banking web site). This



23 Block the execution of unwanted Java/Java Scripts with NoScript extension

whitelist based pre-emptive script blocking approach prevents exploitation of security vulnerabilities (known and not known yet) with no loss of functionality.

- Enable JavaScript/Java execution for sites you trust with a simple left-click on the NoScript status bar icon (look at the screenshot) or by using the contextual menu for easier operation in the popup status bar-less windows.
- You can get this addon by clicking on "Tools | Extensions | Get more extensions" or directly from <https://addons.mozilla.org/firefox/722/>.

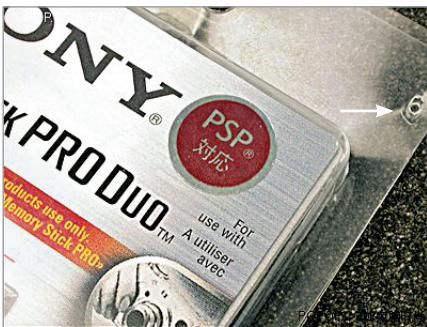
Hardware

24 | Memory Card

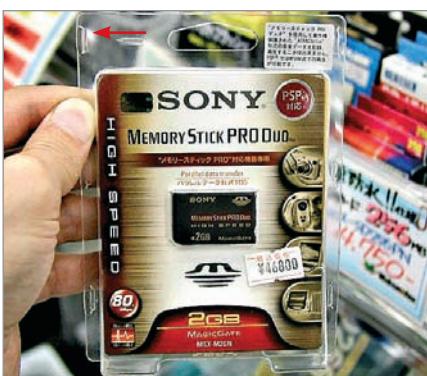
Identify fake Flash cards

I am interested in buying memory cards for my Canon A700 digital camera and my Sony Ericsson W800i phone. The Canon A700 digital camera accepts SD memory card type and the W800i phone the Memory Stick Duo type. Of late, the market is flooded with fake memory cards. Still worse, I have heard that the fakes are almost indistinguishable from the real ones. Can you please suggest how I can identify the fake from the real ones? Also suggest any manufacturer that I should stick to?

CHIP TIP Yes, it's true that the market is inundated with fake memory cards. This is especially rampant in the grey market. There are almost perfect imitations of Sony Memory Stick Duo cards. Duplicate SanDisk SD cards are also available when SanDisk has not even started selling their products in retail. They will soon be launching their entire series of SD, Memory Stick, Compact Flash and Memory Stick Duo cards. These



24a Fake Memory Stick packaging with rounded staples



24b Original Memory Stick packaging with long staples

duplicate cards sell for almost half the price luring the customer into buying them without a bill and warranty. For example, a fake Sandisk 2GB SD card sells for Rs 1,500 and an original Kingston 1GB card with bill and warranty costs Rs 3,000. Fake doesn't mean that they don't function at all. They run at lesser speeds and get spoilt easily. Here's how you can identify fakes.

- **Packaging:** Although the packaging of the fake Memory Stick Duo is similar to that of the real, the latter has long staples and is sealed using heat. The fake ones have rounded seals and are sealed using glue.
- **Physical structure:** Information on the back of original Memory Stick Duos is laser etched. That is, if you run your finger over it, you will not feel a thing. The fakes have information printed on them or they are poorly etched. When you move your finger over them, the printed information appears bumped up. Another way to identify is to hold the back of the card horizontally under a light source, at a level little lower than your eyes. You will feel that the card

is blank with nothing on it. The fake ones have the information printed or indented. Original SanDisk cards have a unique serial number laser etched on the back. You can take the serial number and enter it on SanDisk's web site to check for authenticity. Fake SanDisk memory cards have strikingly similar packaging but don't have a serial number printed at the back.

- **Transfer speeds:** You cannot check the transfer speeds while purchasing. But you can check your existing ones. The original Sony Memory Stick Duos have a transfer speed of up to 80 Mbps whereas the fake ones go up to a maximum of 60 to 65 Mbps.
- **Price:** Fake 2 GB Sony Memory Stick Duos cost Rs 2,200 to 2,500 whereas the original ones cost nothing less than Rs 5,000.

So our advice is don't go for low cost Memory Sticks in the grey market since the chances of getting fake ones are almost certain. Instead purchase cards from retail stores with bill and warranty. Brands like Kingston offer lifetime warranty on their memory cards.

25 | Gigabit-LAN Adapter Internet speed

I have currently upgraded my PC. My new motherboard has an onboard Gigabit-LAN adapter. To surf, I use MTNL's Triband with a connection speed of 256 Kbps. Will using the Gigabit-LAN (1000 Mbps) adapter over the usual 10/100 Mbps LAN adapter give me better Internet connection speeds?

CHIP TIP First let's dwell upon how the whole Internet connection cycle works from the service provider to your home. MTNL is the service provider in your case and DSL is the type of connection provided by them. Internet is provided on the RJ-11 phone line used to make telephone calls. You can simultaneously make phone calls and surf the Internet, one of the high points of an ADSL connection. ADSL stands for Asymmetric Digital Subscriber Line. It's called asymmetric because the volume of data transfer is not same in both the directions. It's higher while downloading. ADSL 1 offers a maximum download speed

of up to 8 Mbps and a maximum upload speed of 1 Mbps. A 256 Kbps download speed is typically good for home users who download significantly. Now the Gigabit adapter is capable of speeds up to 1000 Mbps but it doesn't matter since the connection speed is only 256 Kbps. So to access the Internet with a 256 Kbps connection, it doesn't make a difference if you are using a Gigabit LAN adapter or a 10/100 Mbps network card. But if you have two computers with Gigabit LAN connected on a LAN Network then you can theoretically get transfer speeds of up to 1000 Mbps. But again, you will face the bottleneck of hard disk transfer speeds ranging between 20 to 50 MBps in the case of SATA drives.

26 | Hard Drive

Monitoring hard drive reliability

My hard drive makes weird noise and data access from it is extremely slow. Is it about to fail? Is there a way to predict hard drive failures?

CHIP TIP While it is not possible to accurately predict a hard drive failure, advances in technology have made it possible to monitor certain aspects of hard drives and a deterioration of some of the values indicates a decline in reliability and possibly a near-time hard drive failure. All modern hard drives have an in-built self-monitoring system known as S.M.A.R.T or Self-Monitoring, Analysis and Reporting Technology. While electronic failures cannot be determined in advance, mechanical failures in a hard drive (constituting at least 60 percent of failure) give fair failure indications. S.M.A.R.T provides certain attributes to determine hard drive failures —you can monitor your hard drive's SMART attributes using free software like HDTune that can be freely downloaded from <http://www.hdtune.com>. If HDTune shows any of the attributes in yellow, you know there is a problem. Programs like HDTune also indicate the drive's operating temperature with the help of which you can predict and prevent the hard drive from burning out by providing it with additional cooling or bringing down the ambient temperature. ■

A CG Treasure Chest

Pirates of the Caribbean: Dead Man's Chest has produced memorable CG characterizations, far more complex but believable. We look at some of the most popular ones here...

Davy Jones

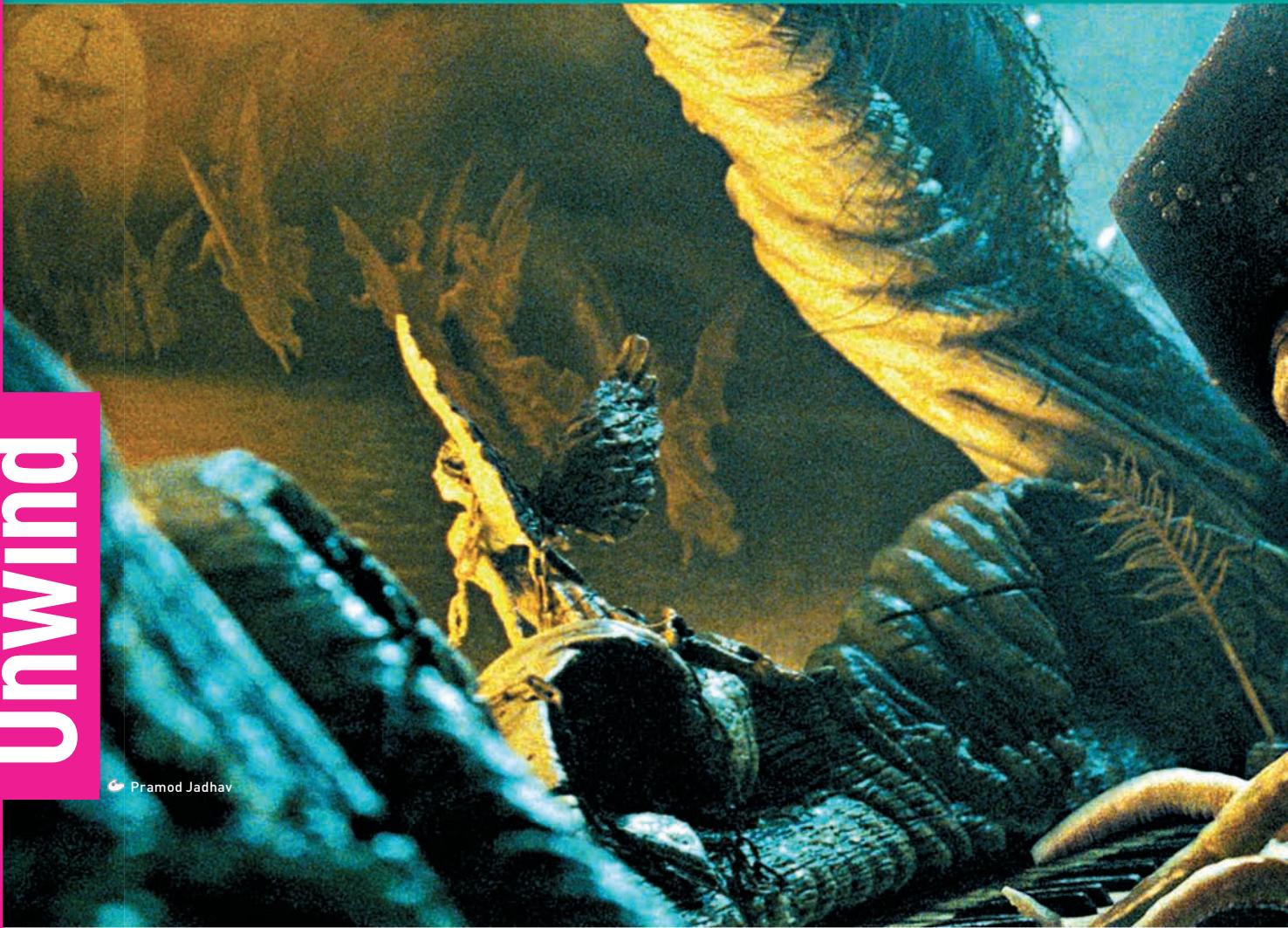
The multi-tentacled Davy Jones cursed to sail forever on his ship, The Flying Dutchman, has been considered the next great CG accomplishment after Gollum and King Kong. To ramp up the animation of the prequel, visual effects supervisors at Industrial Light and Magic (ILM) got the creature pipeline up to speed on the new Zeno (ILM's proprietary internal software) platform. Taking a break from the conventional MoCap or hand animation, ILM created an innovative system called Imocap that facilitated on-set and on-location motion capture to evince the most believable look out of actor Bill Nighy, who played Jones.

Davy Jones is an extravagant mutation, part human and part squid, wagging his beard of wiggly tentacles. John Knoll, visual effects supervisor at ILM said the challenge was to create a character that could stand up to close-ups and have all the richness and detail you'd see in a live-action character. Bill Nighy was made to wear a sensor-studded suit and his movement was tracked by the camera to capture the skeletal motion and later applied to his CG character.

The most complex CG character in *Dead Man's Chest*, Davy Jones is out and out CG. To create his wagging tentacle-beard, research and development folks at ILM worked with James Tooley, creature development

Unwind

• Pramod Jadhav



supervisor and Karin Derlich, creature technical director, who produced behaviors after looking up several live octopus references. All the behaviors were then added to the simulation engine through "Joint Motors", which means all the tentacles were divided into little joint segments. Each segment was essentially a little motor that was directed to swing in one way or the other. The joint motor impulses were released at the same time when the tentacles received force information on which way to swing; this is how the tentacles moved collectively. To make the tentacles stick to each other and appear as one big clump of viscous tubes, "Sticktion" (a combination of friction and stickiness) was applied. The tentacles at the bottom of the heap would stick to Jones' chest in a big matte while the bigger ones in front hanging from his chin could really swing around.

CG water (created using ILM's new fluid dynamics engine, in which nifty algorithms were added through multiple processors) was used around the base of the tentacles swishing underwater.

The facial expressions of Davy Jones were produced by a team of animators at ILM, who studied Bill's performance on film, and captured every nuance and translated that into his CG version. Facial animation (with an unusual mouth and without a nose) was done by hand in Zeno.

Before the animators plunged into their CG creations, they watched videos of real performances by Bill Nighy and his crew members, all of who are an intimating mix of humans and monsters. So it began with run-of-the-mill shooting on the sets, characteristic of every film. It was important to cast actors in all those roles, have them on set and photograph them like it was any other part of the movie, as the CG actors would be reinterpreting the live actors and they had to be as real as it could get. Knoll didn't want to rely on motion capture after the movie was completed or actors playing to nobody against a blue screen; this was necessary to ensure there was no stylistic difference between the visual effects and rest of the live action.

The magic of Imocap

Dead Man's Chest provided an opportunity to the animators at ILM to work outside the periphery of the MoCap (Motion Capture) studio. So when director Gore Verbinski demanded that the film be a significant step up of the prequel in terms of presenting a veritable mix of characters, the research and development team at Industrial Light Magic got down to work on a new avatar of its proprietary motion capture system, called Imocap.

The Imocap software has additional functionalities such as new ways of tracking data through reference points in specially designed suits, which the actors playing CG characters were required to wear.



Shooting on the sets

Reference cameras were used to film on the sets and some of them were placed in watertight enclosures and wired to a computer for storing the images. This was great for the on-set stuff. For beaches and jungles, untethered cameras were used with lightweight tripods.

CG vs real

With the glory of CG, have the real characters failed to make an impression? For now, it certainly seems CG has surpassed live action, as the CG characters remain firmly etched on your mind. Whittling it down, Will Turner (Orlando Bloom) and Elizabeth Swann (Keira Knightley) throw up no surprises and Captain Jack Sparrow shows no trappings of extraordinary charisma. The film is a special effects delight—whether it's the exciting moments of battle between the rampaging Kraken and Jones or the capricious Flying Dutchman displaying its histrionics—these are virtual ideas translated into an unforgettable reality.

Kraken

A mythological monster, Kraken rings a familiar bell (remember *20,000 Leagues Under the Sea?*). An important character in the film, responsible for Jones' destruction, Kraken had to be appealing to strike a note. A giant squid, it pounces on sailors while attacking ships, grabbing them off the decks with its long maniacal arms, and is capable of swallowing an entire ship. Kraken is not bereft of tentacles, so it was important to sketch them as opposed to that of Jones. While the tentacles were modeled in Maya, Kraken was keyframe animated apart from some flesh simulation enhancements created in Zeno. As the tentacles appeared to be too tidy for an ugly squid, suckers on each row of tentacle were tweaked and replaced with disheveled ones to retain the look of a creature that can give you the heebie-jeebies. Interestingly, Kraken is the only character not backed by a real performance.

The Flying Dutchman

One of the main stars in the movie is Davy Jones' 380-feet long ship, The Flying

Dutchman. The ship has been personified with its illusory capabilities to fit the occult theme of the movie. A real ship was built and used for a lot of the filming but CG artists came up with a version that was used for all the wide shots. Animators decided on using computer graphics because the Dutchman had to do things that couldn't be done with a real ship or with miniatures—such as dipping underwater like a submarine or springing up to the surface to catch the enemy off guard. All these shots were accomplished with CG water and Zeno enabled adding particle effects such as droplet size and realistic dispersion of particles.

The crew of The Flying Dutchmen include Ogilvey with a sea sponge head; Palafico, whose head is a translucent red fan coral; Koleniko, who has a fish face that can puff up with spines, and a crab-like creature whose head rotates in and out of the shell.

The movie has hit the screens—check it out and partake of all this wizardry. ■

| Sharmistha Dey



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X360 Uncovered

We strip down this new beast of console gaming—don't attempt it at home!



The Xbox 360 has been the talk of the town for quite a while now, especially after Microsoft unveiled it in the country during the last week of May. As a gamer, I have been loyal to the PC even after the PS, PS2, PSP and Xbox were launched. But I was floored by the 360. I was especially attracted to its double concave design—according to the manufacturers, it is supposed to convey the effect of withholding power, about to explode or exhale. Metaphorically, of course!

Microsoft precipitated the launch of the Xbox in order to wage a war against long-time console giant Sony who was already leading in the console sphere with its PS and the PS2. But forget throwing competition for Sony's consoles, the original Xbox was a big disappointment. Microsoft put together a very ugly black box with sophisticated computer parts (at that time) and sold it at a price higher than that of the PS2. Even though the Xbox sold pretty well, it was no match for the PS2 which was by far the best in the console market on several counts like gameplay and game title support.

After the success of the PS2, Sony went on to introduce the PSP, which became an instant hit with the younger gamers. But Microsoft wasn't sitting silent; they were working on the new version of the Xbox—the Xbox 360—in collaboration with IBM (for the motherboard and main processor) and ATI (for the graphics). It took more than two years to build this next-generation console packed with all the features it boasts of today. Here in India, the console has been set for release in the first week of September—earlier than Sony PS3's worldwide release.

The release of the PS2 last Christmas might have been the key factor in its quick disappearance from shelves. The PS3 is scheduled to release around the end of the year, although speculations are it will not be seen before the beginning of 2007. And until it arrives, we cannot assess how it will fare against Microsoft's new kid on the block. A lot of comments have been made about the 360's configuration and capabilities. Fortunately, we were lucky to get our hands on the console. And guess what—we even ripped it apart to show you what lies within! But that comes later.

Get in the know

The console includes some super-cool accessories like faceplates, headsets, stickers and even gamepad upgrades. The wireless controllers let you stand away from the console upto a range of 30 feet. These gamepads are responsive but the force feedback can get really irritating especially when you are losing the game you're playing!

The 360 has great multimedia capabilities too; it enables players to customize their MPEG music sticks with customized playlists in addition to connecting to Microsoft's Media Center for a complete entertainment experience. Stream music from your portable audio player and sync it to view images you shot during your last vacation; play music and customize your dashboard with themes, gamer tiles and have fun doing it too.

The console is compatible with Windows Media Center and the remote controls the operating system and the DVD drive.

The surgery

Our quest to split open the Xbox 360 was completely exhilarating. It took us a good 15 minutes, two pairs of hands and a couple of suggestions to get the slick white cover and metallic casing off. The outer casing consists of four shells that are held together using an intelligent design consisting solely of clasps. Inside, the first thing that grabbed our attention was the white barrel shaped fan shroud that can be twisted and removed.

The DVD drive is connected to the motherboard with two cables—the power supply and the Serial ATA. Removing the fan shroud reveals the cooling fans and

Interestingly, Microsoft didn't load the OS on the Xbox 360's drive but on the mainboard itself, through a special flash memory chip!

While the other console giants were boasting about their backward compatibility, Microsoft, in a surprise move that caught everyone off guard, announced that more than 200 Xbox games would not be backward compatible with the Xbox 360.

From the launch screen, users can access the arcade marketplace, which delivers several goodies such as free games, affordable games, addictive, non-stop exclusive arcade games, the list goes on... and yeah, the Japanese arcade lords will be coming in with their epoch-making titles developed exclusively for the 360 as well.

Another advantage is the ability to go head-to-head with another Xbox 360 using multi-wireless connections, and each at broadband-level speeds.

One thing that gamers might complain

about is less storage; integrating a standard DVD drive, its storage capacity is not even half of that of a Blu-Ray disc or HD DVD. And if your storage needs exceed 20 GB (out of which it has an effective capacity of just 13 GB), the only way out is to buy another hard disk. But there shouldn't be much to crib about as this is sufficient room on the bundled drive for storing saved games and the like.

The 360 is the most powerful, sophisticated, and dedicated game console to date. From what we've seen, it is tailor-made for gamers and enriched with tools to let them customize and choose their communities. Also, getting online and playing around with arcade and online games is a totally different trip. It is an experience worth the effort.

On the whole, this piece of hardware is every gamer's dream. The inauguration price of Rs 17,991 (excluding taxes) is decent plus you will get loads of goodies free.

therefore it may be possible that a digital video signal is present, but not made available. If it were there, it is a mystery why Microsoft didn't offer DVI/HDMI capability today.

On the left side of the motherboard we've got the SATA data connector, which is a standard SATA connector for the DVD drive. Next to it you'll see the power connector. To the right of it, there is a connector, which is essentially nothing more than a SATA interface for the optional removable hard drive. In front of the board, there are two USB 2.0 ports. The memory cards also have their own interface on the board. As



Hind sight: The AV port, power supply, USB and Ethernet jack reside at the back



The detachable 20 GB hard disk can be seen at the top

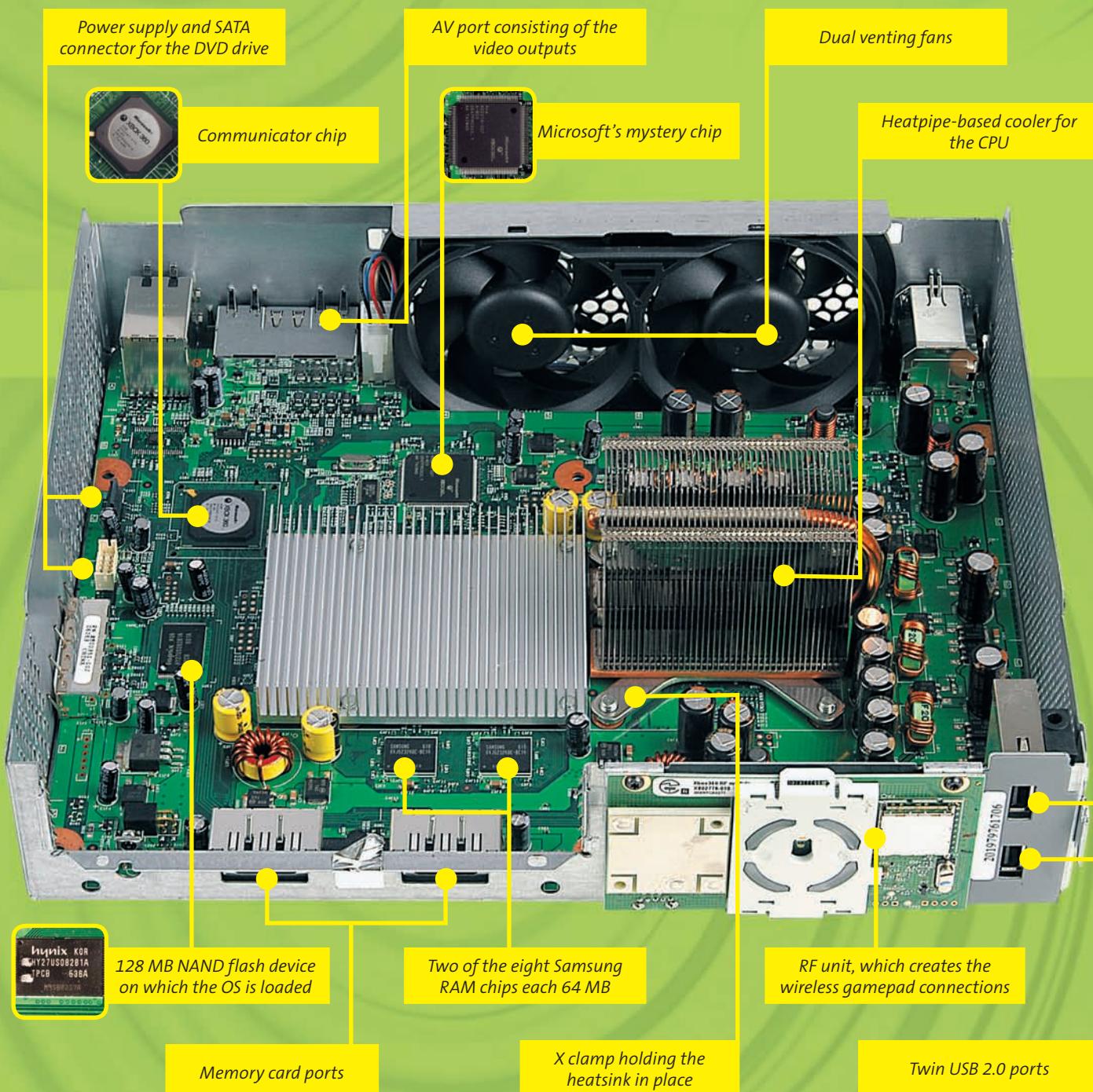


The AV port supports Component as well as Composite video outputs

mentioned earlier, the Xbox 360's OS and other software resides on a 128 Mb (16 MB) NAND flash device located on the motherboard itself. Next up we found 512 MB of Samsung's GDDR3 memory chips on the Xbox 360's motherboard (this comprises a total of 8 chips of 64 MB each). The part number on the chip indicates a 700 MHz operating frequency, with a 1.4 Gbps pin data rate. The heart

and soul of the Xbox 360 is of course its CPU and GPU. The CPU is a formidable 3-core PowerPC-based processor with each core buzzing away at a clock speed of 3.2 GHz. The Xbox 360 does pack a big punch and speaks for itself in almost all ways. But the grueling fact remains that these awesome graphics are downsized without an HDTV, LCD or at least a big screen TV that would do justice to the high resolutions that

the console is capable of putting out. The console can be connected to a monitor but, yes, you need to have a SCART (female) to VGA (male) converter to transmit those HD graphics and, no, Microsoft doesn't include this. If you really want to use your trusty old analog TV screen, you need to connect it to the console using a component to S-video converter wire, which actually mutes the experience.



Incoming entertainment

To get a sense of this gaming monster's capabilities, we hooked up the Xbox 360 to a 42-inch Philips TFT and ran the games over component input for extreme video quality. The games we checked out were:

- Project Gotham Racing 3
- Perfect Dark Zero (FPS)
- Dead or Alive 4 (combat)
- Kameo: Elements of Power (RPG)
- FIFA World Cup Germany 2006 (sport)

There are other big titles like *Call of Duty 2* and *Quake 4* but these aren't included in the bundle sold here in India. In *Kameo: Elements of Power*, one can neither deny its beauty nor its next-generation gameplay and this was apparent from its rich graphics and spot-on physics. The adventure game has an honest RPG feel and is infused with cinema-quality graphics. Guess some of that time working with Nintendo rubbed off after all! Then there's the sleek, powerful racer *Project Gotham Racing 3*—a stellar-looking game with a huge set of features, svelte cars and some of the best potential online components available. Most interesting in the game is the car modeling, the lighting effects and the attention to detail in creating the locales in which you race—it is almost like playing a movie! What can top that? *Perfect Dark Zero*, Rare's first person shooter may very well lead the online charge with as many as 32 players online in a sequel to top all sequels.

Dead or Alive 4 really gives this console a nice warm up—the speed at which the characters move is incredible and the motion capture is fluid and ultra-realistic. This game blazes away at smooth frame rates without a hitch, and the art team has worked diligently to create smooth animations that blend between every move, fall, throw and taunt. Featuring awesome unlockables, Itagaki and team have created a hand-to-hand combat offering that will satisfy your every twitchy split-second demand. Oh yeah, and *DOA 4* loads in just about 4 seconds. And that too, in

any mode of gameplay. We did get our hands on *Quake 4* for the Xbox 360 and it surpassed the level of gore we were expecting. The game was very well paced and the story well thought of—good gameplay and a twist that will engross you completely. It did have some downfalls though—object interaction was low, outdoor scenarios could have been a little more detailed and better team AI could have rounded this off into a stellar title. But we're getting a little ahead of ourselves. The *Quake 4* story picks up where *Quake 2* left off, with the Space Marines fighting the Strogg, but this time on the enemy's home planet, Stroggos. You take to the role of Corporal Kane as the Marines attempt to basically annihilate their Borg nemesis. If you've played the PC version, you'll notice it is very similar, but the graphics, physics and sheer resolution will leave you spellbound.

Celebrating the world's largest sporting event, EA sports has come out with a blockbuster with *FIFA World Cup Germany 2006*. Controlling some of the world's most skilled players is quite a thrill in itself. The game boasts 12 official stadiums that were used at this year's World Cup. Gamers can play as their favorite team, from qualification right through to a virtual reproduction of the tournament in Germany. The game has a plethora of in-game unlockables and achievements such as legendary players and exclusive apparel. All of these titles are gorgeous—they are all unique, and they are all exclusive. In the game, there is plenty of eye-candy like depth-of-field, true-to-life character modeled faces and authentic locales.

The Xbox 360, in my opinion, is a must-have system for any red-blooded gamer, because it's clearly the most powerful, sophisticated and dedicated gaming system. Besides the sheer power, it stands out in its ability to be endlessly configured—from the shell to the very user interface to gaming content. ■

| Erick Rustomji



The face of the Xbox 360's OS is called the dashboard



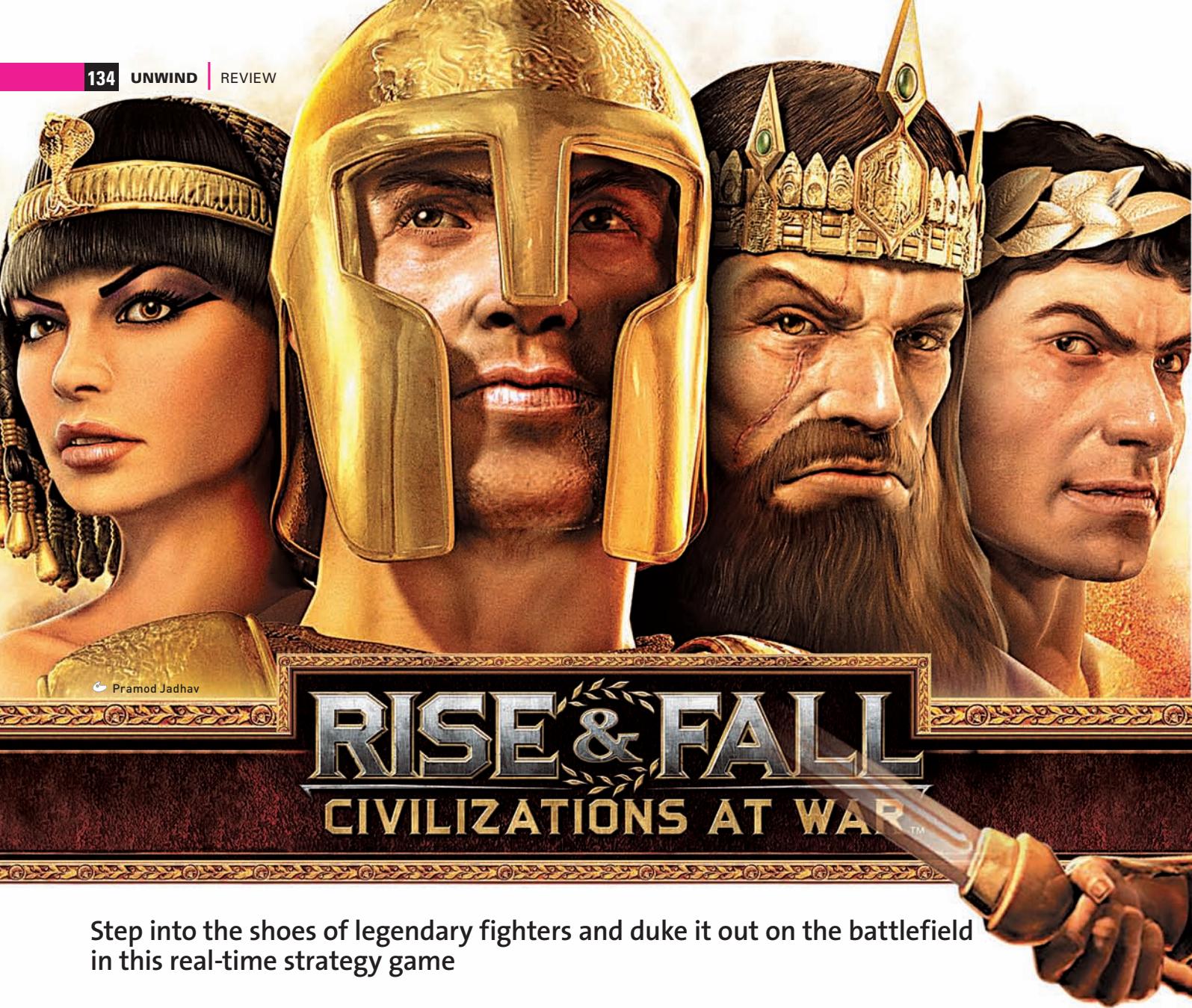
Get rid of your arachnophobia (*Quake 4*)



It's all up to me now!
(*FIFA World Cup, Germany 2006*)



All revved up (*Project Gotham Racing 3*)



 Pramod Jadhav

RISE & FALL

CIVILIZATIONS AT WAR™

Step into the shoes of legendary fighters and duke it out on the battlefield in this real-time strategy game

You must have played numerous RTS games in which you point and click your way to victory. However, *Rise & Fall: Civilizations at War* is different from other RTS games. Rather than being just another real-time strategy game, the developers wanted to incorporate the authentic feeling of fighting on the battlefield with your men. You step into the shoes of legendary fighters to lead your men to victory within the third-person action mode. For all those strategy lovers, this is a chance to actually be the hero of the game.

The game revolves around the basic concept of any RTS game—resource gathering and setting up new settlements. Managing peasants and their daily duties is still among the chores you have to decide upon. You must harvest gold, wood,

and glory. Glory is received with building unique structures and accomplishing heroic feats. Glory is especially important when leveling up your hero and other military units. Apart from the fighting attributes, glory can be used on bonuses to harvest gold and wood faster.

Rise & Fall is about taking control over the heroes on the battlefield. You start with a choice between two heroes, both with different abilities and powers. You can switch back and forth between the two depending on how you want to play the game. A few missions will deny you the ability to do so but nothing too drastic happens when you control the hero in the third-person mode. The heroes run the battlefield and their actions determine if the battle can be won or not. There are

some limitations in using the hero such as stamina. If you run out of stamina, you'll be forced out of the third-person view into the traditional RTS view. The longer you are in the third-person mode, the better the chance you have of clearing out the battlefield.

Regrettably, the key to victory depends on rushing the opponent. Building as many units as you can, and then rushing before the enemy can set up any type of defence usually guarantees a victory.

A.I. is disappointing in this game. The enemy likes to sit back and give you as much time as you'd like to build your troops to lead an attack. It isn't exactly the smartest thing to do in a war and when the same feat repeats itself in several battles, the game becomes

way too easy and monotonous.

The single-player campaign isn't up to the mark. Two campaigns that are included in this game are the worlds of Greece and Rome. Under the Greek campaign, you'll be facing the Persians led by Alexander the Great. The Rome campaign has you playing the role of an Egyptian fighting against the Roman invaders led by Cleopatra. The writing, the characters and cut-scenes all pan out like a school play. The third-person missions aren't fresh at all. The campaign is, without doubt, a low point. Two modes—skirmish and multi-player have been included in the final package. The multi-player mode allows up to eight players to duke it out on the 24 maps provided.

The graphics are not on par with modern-day RTS titles. The level and character designs are neither authentic nor artistic. The cut-scenes are poorly put

Rise & Fall: Civilizations at War is a big disappointment. I had high expectations from this real-time strategy game from the makers of *Empire Earth*. But after playing it, I got the distinct feeling that it is an incomplete game that was precipitated for release. ■

| Anup Pillai



together—there's clipping issues and many other technical faults. The third-person action mode doesn't help out at all with the visuals. Frame-rate issues linger inspite of playing this game on a high-end system. Sound is considerably better but it ends up being terribly clichéd. There's nothing extraordinary about the audio.

RATINGS

6.5 / 10

For: Allows you to take control of your heroes.

Against: Dissapointing AI; very mediocre visual effects.

■ Publisher: Midway Developer: Stainless Steel ■ System: Windows 2000/XP, Pentium 4 1.5 GHz or Athlon XP equivalent, 512 MB RAM, grpahic card with 64 MB RAM, 5 GB of free hard disk space.



If you're looking for a first-person shooter that lets you unload round after round of bullets without having to worry about taking strategic positions or protecting yourself from enemy fire, then you don't need to look beyond *Black*. In fact, it is difficult to find a game which is better at putting a gun in your hand and letting you blow up absolutely everything in sight. Mind you, with *Black* there's more.

Unlike other FPS games where you need to take cover and measure every shot, *Black* allows you to fire endlessly at your enemy. This does not mean that you never run out of ammo or that you never get hurt. *Black* treads the fine line that unites fun and realism in an FPS.

Game play is neither very slow nor very fast; it allows you to set your own pace. You can move out in the open and empty rounds into the general direction of the enemy or you can alternate between firing and hiding behind pillars and walls. Either way, explosions and destruction is guaranteed.

On some levels, you will find alternate paths and these will help you achieve secondary objectives and sometimes give vantage points to launch surprise attacks on your enemy.

Almost every bullet fired reacts with the world in some way or the other. Whether it is the groan of the enemy when he is hit or the explosion of gas canisters, or the ground beneath you being lit up by enemy fire or just dust being blown up, you will know what happened to the shot you just fired. Volumetric lighting, specular highlights, bloom effects and even a bit of depth-of-field during reloads are all seen here, and even if they're faked due to current-gen hardware restrictions, every effect is pulled off beautifully. In fact, so good are the particle effects and the realism of explosions, that this game easily showcases the power and the limitation of the PS2 system.

Black features the regular compliment of guns, grenades and RPGs. The storyline is



linked to terrorism and how a special team is trying to put an end to it—we won't spoil the fun by giving away too much. Another standout feature of this game is the sound. The various weapon effects are second to none and ricochets and bullet effects have multiple samples associated with them, so you'll never hear the same sound twice. Coupled with these sound effects is an amazingly engrossing soundtrack that provides nice audio cues as you move through the stages.

All in all, *Black* gives you a visceral gaming experience. It is easily one of the best-looking FPS games ever to have graced the PS2. Its only limitation, and it is difficult to find one, is that the game rarely leaves its non-stop action mode. There are no side-plots or moments that really stand out. But then again, non-stop action is what *Black* is all about. Whether you're new to FPS games or are an old pro, *Black* is an experience that is not to be missed. Load your weapon and start shooting. Now! ■

| Rahul Athalye

RATINGS

9 / 10

For: Next-gen graphics on PS2; awesome sound, bullets, bullets and more bullets.

Against: No side-plots; lack of multiplayer and online modes.

■ Price: 2,999 ■ Publisher: EA ■ Distributor: Milestone Interactive ■ Phone: 022-28203319 ■ System: PS2

SMS us! Story code: URB (See Page 20 for details)

HEROES V OF MIGHT AND MAGIC

Make your mark as a hero in this game that revives the true spirit of turn-based strategy

For those of you who are not familiar with the *HOMM* series, it is a turn-based strategy game. In fact, *HOMM II* was considered to be one of the best turn-based strategy games ever. While the rest of the games in this series failed to live up to the hype generated by *HOMM II*, this one revives the spirit.

The game features six factions; namely Knights, Demons, Undead, Wizards, Elves and Dungeon, all different from each other. Each faction consists of units, heroes and designs from the earlier games. You start with a hero. The hero can move only a certain distance every day (so basically you and your enemy take alternate turns every day). It takes a week for new troops to be available and the number of days in a week are predetermined. Your hero and his/her army can capture buildings, collect resources, battle enemy armies and capture cities. The initial Knight campaign is a long tutorial and as the game progresses you are introduced to other heroes and units in the game.

Once you capture a city, you can upgrade it. Each improvement upgrades visually on the city screen, so you end up with a massive fortress or a traditional citadel you can be really proud of. Don't let your castles remain undefended or they'll be lost. The interface is simple but one thing that you will notice is the lack of information about resources and enemy units.

RATINGS

8.5 / 10

For: Superb visual effects; good campaigns; compelling gameplay.

Against: No map editor; small glitches in enemy AI.

The three main modes of game play include the single player campaign which has six campaigns in all, the custom maps and the multiplayer mode.

The sound effects are decent and the background score is good. Graphics is excellent—the camera rotates 360 degrees and you can zoom in or out of the maps. Even on the lowest video quality settings, the environment and objects are very striking. The characters are all distinctly drawn and efforts have been taken to give each unit an appearance befitting its actions and descriptions.

When an enemy stack is killed, often the opposing units cheer, which is a neat feature. But in order to derive optimum pleasure out of this game, you will need a high-end graphics card. The game runs smoothly on a mid-range system too but it isn't half as much fun when you play the game with all the settings turned up to maximum. The omission of a map editor is another noticeable drawback. There are some minor glitches in the enemy AI as well during combat.

HOMM V is a game that allows you to build a huge army, amass tons of money and resources and defeat your enemy. If you enjoy turn-based strategy games, you must have this game in your collection. ■

| Anup Pillai



By Pramod Jadhav

■ Price: 1,299 ■ Publisher: Ubisoft ■ Distributor: e-xpress Interactive ■ Phone: 022-28870017 ■ System: Windows 2000/XP, Pentium 4 1.5 GHz or Athlon XP equivalent, 512 MB RAM, graphic card with 64 MB RAM, 2 GB of free hard disk space.

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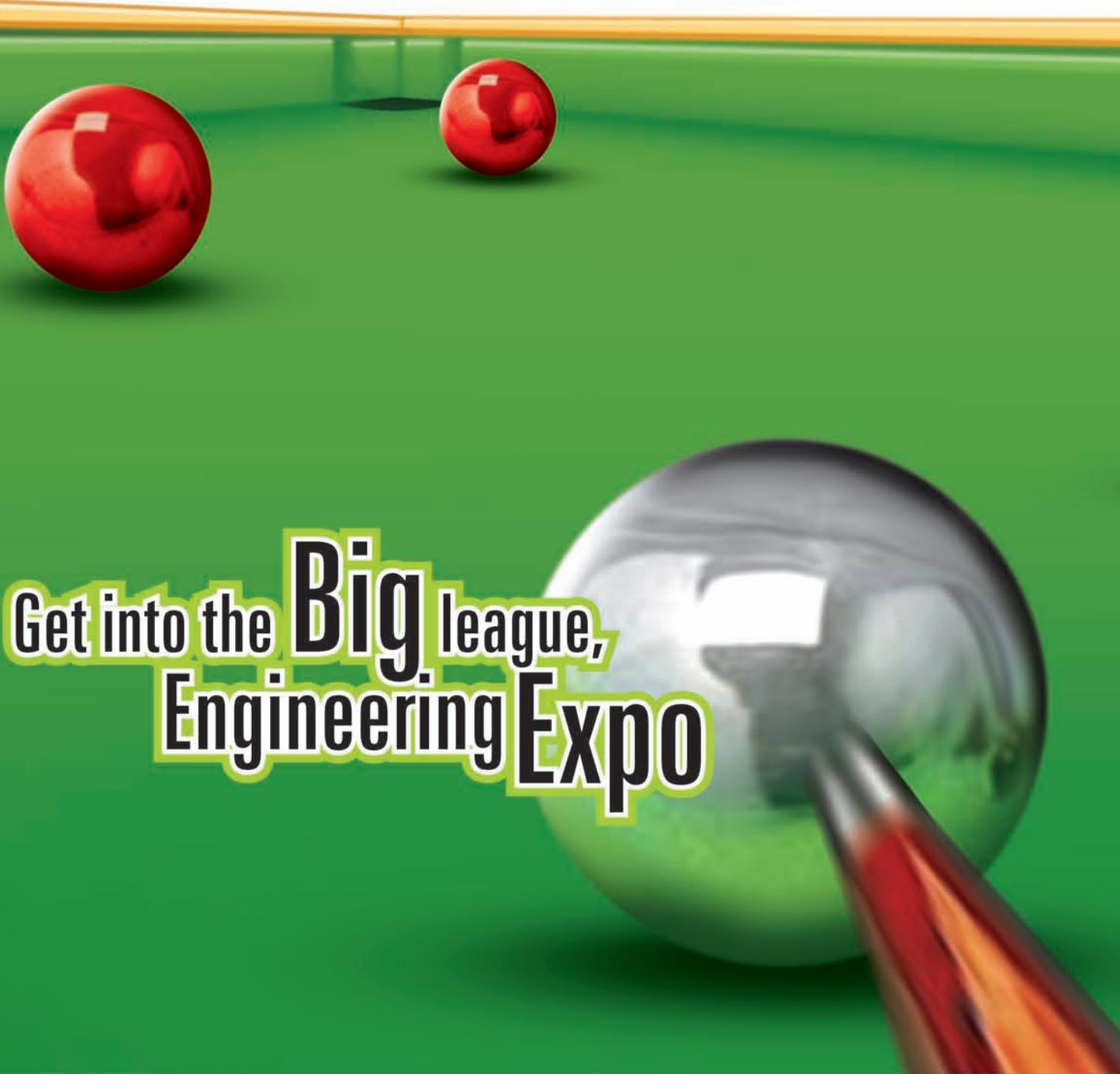


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Company: STMicroelectronics Pvt. Ltd.
Profile: The candidate should be a B.Tech – Electronics with relevant years of exp. in a similar field.
Exp.: 3-6
Location: Greater Noida
Email: dlhhr.con2@st.com

Post: Software Developer
Company: iEnergizer
Profile: Should be a BCA/B.Sc-Computer Science graduate having some exposure in a related field.
Exp.: 2-5
Location: Noida
Email: gunjan.sikka@ienergizer.com

Post: System Administrator
Company: AOL Bangalore Development Center
Profile: Skills like Windows XP and Basic Linux, IE browser, Remote Desktop (MS Remote Desktop, VNC, UltraVNC), Knowledge of network configurations in Windows, Knowledge of how to create installers in Windows, etc.
Exp.: 2-3
Location: Bangalore
Email: lijoyonahr@aol.com

Post: Technical Support Specialist (Enterprise)
Company: Dell India Pvt. Ltd.
Profile: Degree in Computer Science /IT related discipline with a minimum of 2-3 years experience in Server and Storage business Certification in Microsoft/Novell/Linux desirable.
Exp.: 2-4
Location: Bangalore
Email: nithya_priyadarshini@dell.com

Post: Sr. Developer (J2EE)
Company: Emptoris
Profile: Should have exp. in J2ee and will be creating detailed designs for web-application modules along with implementing & coding those designs.
Exp.: 4-6
Location: Pune
Email: ngupta@emptoris.com

Post: Database Administrator
Company: IVY Comptech Pvt. Ltd.
Profile: Experienced in Oracle 9i RAC administration with excellent on Partitioned table management and handling Archival requirement. Should have worked on very high OLTP oracle 9i (RAC).
Exp.: 2-5

Location: Hyderabad
Email: shwetaa@ivycomptech.com

Post: Software Developer
Company: Naukri.Com
Profile: BE/B.Tech in Computer Sciences/ Electronics & Telecommunications with exp. in database design and SQL, MySQL.
Exp.: 1-2

Location: Noida
Email: siddharth.bhardwaj@naukri.com

Post: Oracle Applications11i Technical Consultant
Company: Oracle India Pvt. Ltd.
Profile: Exp. with Oracle Applications11i in Supply Chain, OM, INV, BOM, WIP, PO, Discrete Manufacturing. Must have worked on Interfaces, Forms, Reports, Conversions, Migrations, and Customizations.

Exp.: 2-5
Location: Hyderabad
Email: sushma.venchal@oracle.com

Post: PeopleSoft Financials Functional Consultant
Company: USi Internetworking Solutions Pvt. Ltd.
Profile: Qualified candidates must have a BS/BS degree or equivalent work exp. and proficiency in PeopleSoft Financials with a concentration in GL, AP, PO, AR, AM, PC, EX, CTR, or BD

Exp.: 3-6
Location: Bangalore
Email: divya.parmar@usi.net

Post: Technical Leader- Wireless Development
Company: Flextronics Software Systems
Profile: Strong C / C++ Programming Skills, Worked on Requirement Analysis and High Level Design, Telecom exp. in 3G /GSM

/GPRS on Access Network Side.
Exp.: 4-8
Location: Gurgaon
Email: ridhi.roy@flextronicssoftware.com

Post: Engineer- SQA
Company: Jataayu Software
Profile: The candidate should have a M.Sc/MCA/B.E/B.Tech degree with relevant exp. in a similar field.
Exp.: 2-3

Location: Bangalore
Email: careers@jataayusoft.com

Post: Software Engineer- C++
Company: Sasken Communication Technologies Ltd.
Profile: The candidate should be Engg.- Computer Science / Electrical / Engineering / Electronics/Telecomm with exposure in a related field.

Exp.: 2-5
Location: Bangalore
Email: c_craju@sasken.com

Post: Sybase Developers
Company: ADP Pvt. Ltd.
Profile: Bachelor's degree in Computer Science or related field with excellent written, oral and interpersonal comm. skills.

Exp.: 1-5
Location: Hyderabad
Email: hrindia@adpindia.com

Post: SAP FICO Consultant
Company: CSC India Pvt. Ltd.
Profile: Should be MCA/M.Sc-Computer Science with relevant exp. in a similar field.
Exp.: 3-6
Location: Delhi
Email: kyeduru@csc.com

Post: Sr. Developer
Company: ITC Infotech India Ltd.
Profile: Should have exp. in PL1 (IBM Mainframe), COBOL, VSAM, DB2 should have good communication and interpersonal skills.
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Location: Bangalore
Email: anirudh.daga@itcinfotech.com

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Company: Keane India Ltd.

Profile: The ideal candidates require very good exp. in Cobol, JCL, DB2, VSAM, and CICS. Exp. in relevant technology with strong comm. skills.

Exp.: 2-5

Location: Noida

Email: preeti_jain@keane.com

Post: Oracle DBA

Company: PIECO Infotech

Profile: OCP Certification with working exp. in UNIX is must. Maintenance of Databases (includes Development, Testing and Production on AIX Environment).

Exp.: 3-10

Location: Bangalore

Email: pooja@piecoinfotech.com

Post: Network Specialist

Company: Perot Systems TSI (India) Ltd.

Profile: Exp. supporting caching technologies primarily Cache Flow, VOIP, VPN, routers, concentrators and firewalls Cisco.

Exp.: 6-10

Location: Delhi/NCR

Email: Amarendra.kumar@ps.net

Post: Project Lead- VC++

Company: Scicom Infotech Pvt. Ltd.

Profile: Should be MCA, B.Tech, BE, ME, with exp. in C/C++, Borland C++, Win32 SDK. Knowledge of ISAM is a plus.

Exp.: 3-5

Location: Delhi

Email: sapna.bansal@scicmp.com

Post: Project Lead- .NET

Company: Wipro Infotech

Profile: B.Sc/BCA/BE/MCA with exp. and deep understanding of the Dot Net application.

Exp.: 4-7

Location: Delhi

Email: devasmita.dash@wipro.com

Post: Sr. Software Engineer

Company: Atrenta India Pvt. Ltd.

Profile: B.E / B.Tech/ M.Tech. in Computer

Science/ Electrical Electronics engineering from reputed Universities preferably IIT's.

Exp.: 3-5

Location: Noida

Email: career@noida.atrenta.com

Post: Software Engineer- C++

Company: Agilis Information Technologies Intl. Pvt. Ltd.

Profile: Basic UNIX system administration skills including shell scripting and similar system programming. Must be detail-oriented, process-oriented, and have a problem-solving attitude.

Exp.: 2-5

Location: Delhi/NCR

Email: careers@agilisinternational.com

Post: Team Lea- .NET

Company: Jam Buster Technologies

Profile: Should have good knowledge of .NET framework and C# concepts. Previous exp. on working C++, VC++ would be an added advtg.

Exp.: 2-5

Location: Pune

Email: amol.potdar@jbt.in

Post: Sr. Developer- AS/400

Company: Syntel (India) Pvt. Ltd.

Profile: Strong Expertise in DB2/400, OS/400, RPG/RPGLE, CL/CLLE, Turnover, Hawkeye, SEQUEL, DBU, Robot Scheduler and Connect Direct. Domain Expertise in Global MAX Application (or a similar Travel Application) preferred.

Exp.: 3-5

Location: Mumbai

Email: sandhya_walawalkar@syntelinc.com

Post: Lotus Notes Administration

Company: HCL Comnet Ltd.

Profile: Must have deep understanding of Lotus Notes 4.6 and 6.5 client functionality, Lotus mail and calendaring, scheduling. Deep understanding of Lotus Domino 4.6 and 6.5 backend server infrastructure also desired.

Exp.: 6-12

Location: Noida

Email: himanshuo@hcl.in

Post: Oracle Payroll Functional Consultant

Company: Patni Computer Systems Ltd.

Profile: The candidate must be well versed with Oracle, with relevant exp. in the same field.

Exp.: 4-8

Location: Mumbai

Email: careers.bangalore@patni.com

Post: Technical Solutions Engineer

Company: Google Online India

Profile: Must be a BCA, B.Sc - Computer Science, with some exposure in a related field.

Exp.: 5-5

Location: Delhi

Email: jobs-hyderabad@google.com

Post: Embedded Software Engineer

Company: ARM Embedded Technologies

Profile: Should be a Bachelors, Masters or Ph.D (computer science, electronics engineering or software engineering preferred), from premier institutes with an excellent academic record.

Exp.: 1-2

Location: Bangalore

Email: cablr@arm.com

Post: Software Engineer- RAID Application

Company: LSI Logic India Pvt. Ltd.

Profile: Exp. in Java, C, C++ and various Web scripts, sockets, networking and Shell scripts. Also exp. with multithreaded applications and synchronization.

Exp.: 2-5

Location: Kolkata

Email: india-staffing@lsil.com

Post: Project Manager

Company: Mentor Graphics (I) Pvt. Ltd.

Profile: Should have exp. with cycle-based simulation and constrained-random simulation with knowledge of assertion languages or libraries, such as PSL, SVA, and OVL.

Exp.: 5-10

Location: Hyderabad

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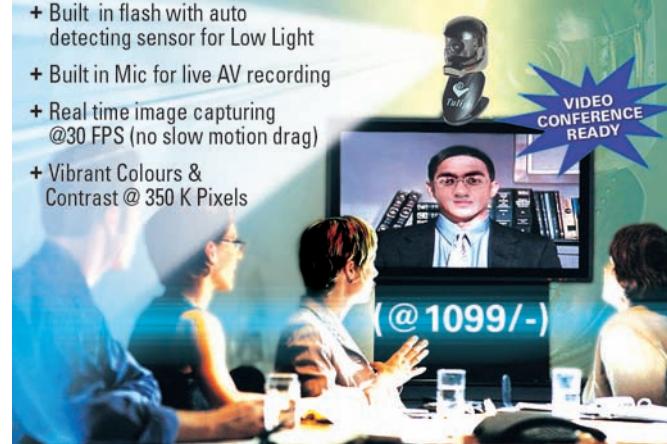
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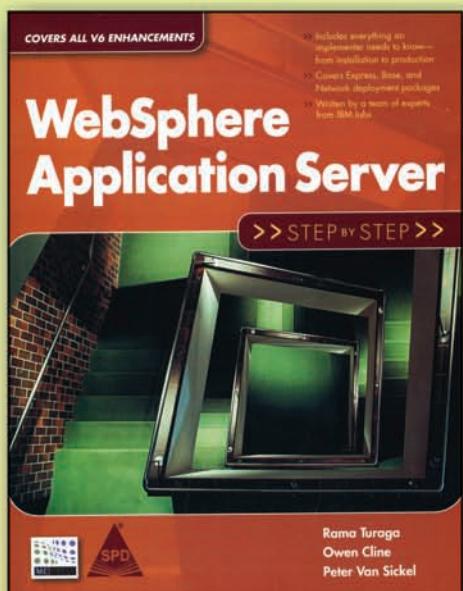
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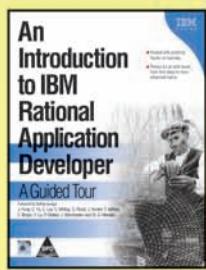
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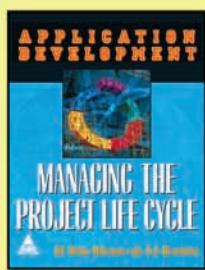
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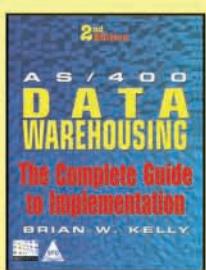
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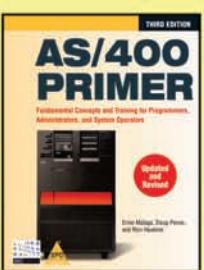
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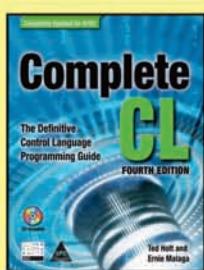
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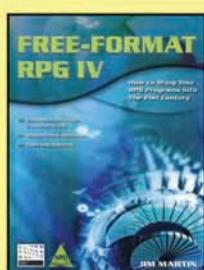
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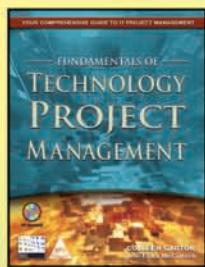
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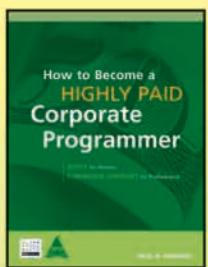
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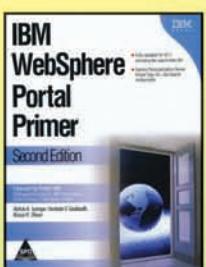
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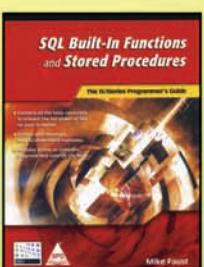
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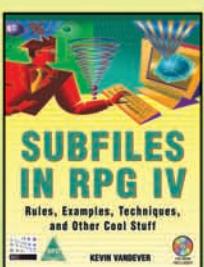
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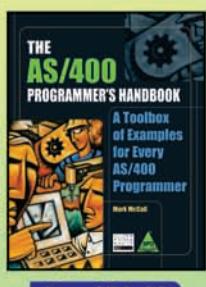
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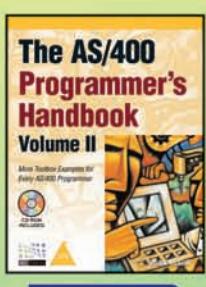
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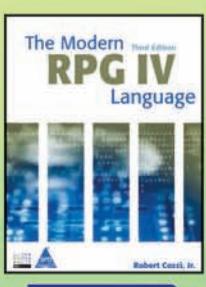
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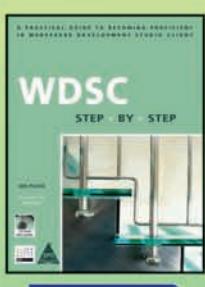
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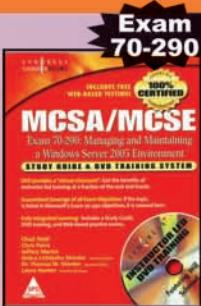
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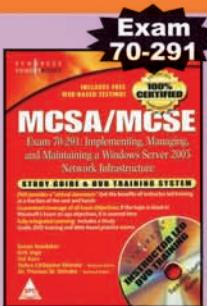
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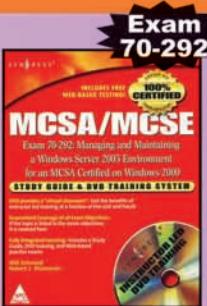
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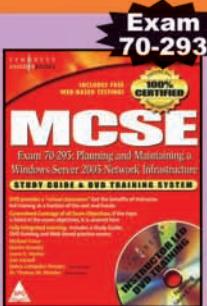
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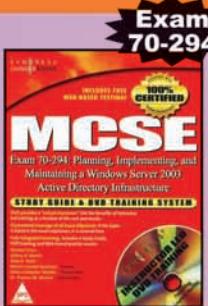
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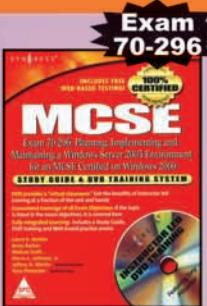
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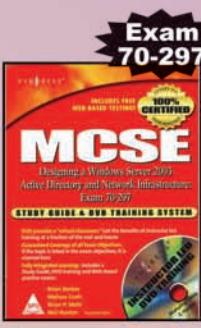
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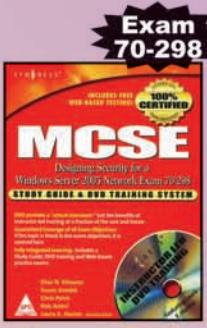
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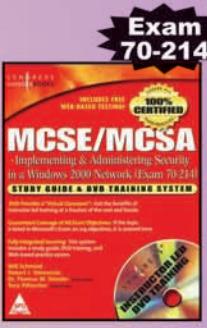
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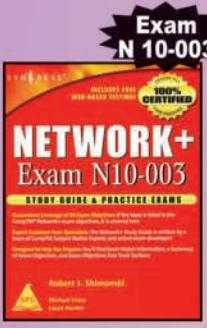
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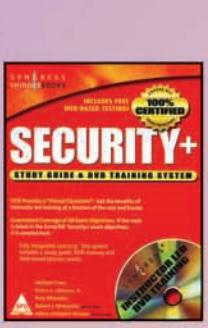
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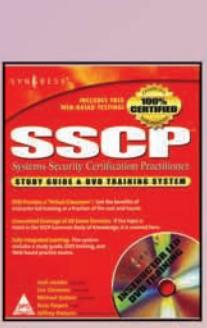
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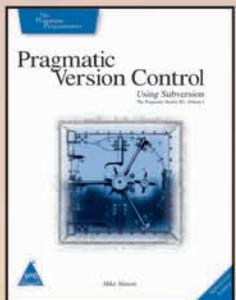


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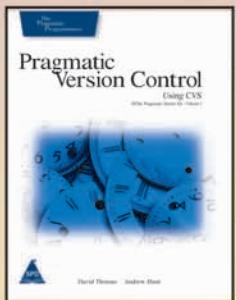


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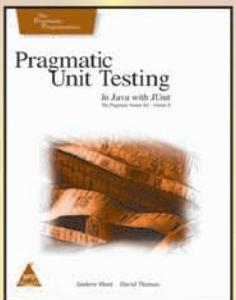
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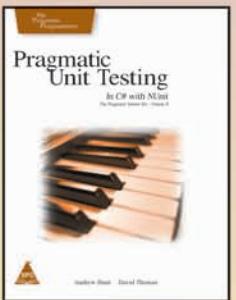
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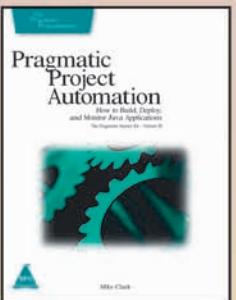
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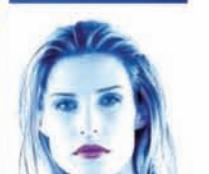
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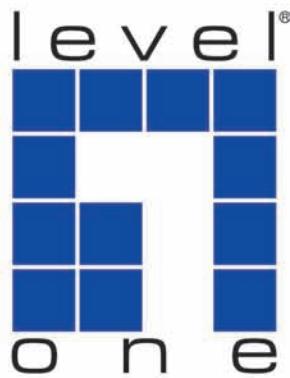
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Failing technology

We hear of new technology springing up almost every day—the Internet allows you to connect to any part of the world from anywhere and everywhere, super-cool cars driving and parking on their own, smart homes opening their doors to welcome you and playing the perfect Jeeves to make sure your needs are taken care of...all of this is reality. Big names in the information and communication business strive every day to arm us with products and ramp up their current technology lines in the next quarter to make our lives that much more comfortable and convenient. Hit the rewind button and you will remember the big and bulky cell phones that addressed our first connectivity concerns. Today, they have metamorphosed in a ubiquitous and indispensable part of our lives and are smaller and more "mobile" than ever. But what happens when technology fails to respond when you need it most? We in Mumbai experienced such a situation on 7/11, when we were gypped by technology.

It is as if July 26, '05 did not teach the telecom authority in India about the importance of having a disaster network management plan in place. Black Tuesday has taught us again that we cannot lean on technology the way we do. At 6:20 pm, on July 11, Mumbai was gripped by a confusion and fear that only the speed and ruthlessness of a terrorist attack can breed. On one hand, there were ghastly scenes of train compartments ripped apart, mangled bodies inside the bogeys and strewn on the tracks; on the other, it was the struggle of those who were lucky enough to have made it. The spirit of the city being what it is, strangers rushed in to lend a helping hand in clearing bodies and assist those who were injured, while simultaneously trying to inform their families that they survived. But jammed cell phone networks had cut off those who were on the spots as well as others in the city from communicating with the rest of the world. We were held hostage by the very network we rely on.

As a badgered Mumbaikar, I suffered the

pangs of not being able to reach my folks outside the city. SMSes showed delivery failures and botched cell phone networks added to the panic more than was necessary. There was chaos everywhere. Given the situation, every Mumbaikar as well as citizens of the nation are forced to ask this question, "Are India's telecom providers really geared up for emergencies like this?" Past disasters have shown no likelihood of improvement in availability of networks in crisis situations. If TRAI is listening, this is an earnest request—while we supposedly have one of the most affordable and widespread cellular communication networks in the country, what happens in the face of even the smallest public emergency (forget a terrorist attack)? Never mind the news channels—from past experience it seems that you simply need to check your cell phone—if the network is down, you can be pretty sure there's an emergency someplace in the city!

The industry is betting big on fledgling technologies like WiMAX but we are still a while away from widespread commercial implementation. While we are still recovering from the effects of the attacks, there have been reports of IT being misused to spread misleading facts. Just a few days ago, news channels flashed the story of an urchin from Delhi making hoax calls from a cell phone to the Delhi police, warning of possible terror attacks. And if that weren't enough, an errant youth senselessly sent an e-mail to a local vernacular newspaper describing who was responsible for the blasts in Mumbai—a Class XII dropout, he had sent the hoax mail from a cyber café in Old Bhopal. Both the striplings were booked by the police and reportedly admitted to have indulged in pranks without nurturing any other intention.

So while we talk about the power that technology endows us with; we need to be vociferous toward aspects like democratization of blogs and accountability for service providers and pull up the government's incoherent policy response to terror. ■

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