

THE MAGAZINE FOR EVERY COMPUTER USER

# HAL PC MAGAZINE

HOUSTON AREA LEAGUE OF PC USERS  
Volume 23, No. 7-9 • Fall 2009

**MIGRATING  
TO  
WINDOWS 7**



# Printer broken? Call Laser Ink.

**FAST REPAIRS FOR LASER AND INKJET  
PRINTERS / MULTIFUNCTION / COPIERS**

*All Major Brands Since 1988*

- FREE REPAIR ESTIMATES in-shop
- \$20 DISCOUNT on in-shop repairs  
*Bring your printer to us and save!*
- EXPERIENCED TECHNICIANS  
*Each with a decade or more  
of hands-on repair experience*
- BUY & SELL USED PRINTERS  
*Sell us your used printer  
or buy our refurbished*

Specializing in



**TONER  
AND INKJET  
CARTRIDGES**

BRAND NEW and  
COMPATIBLE

"MEET IT OR BEAT IT"  
Price Policy

FREE DELIVERY in  
Greater Houston on  
orders of \$40+

**Laser  Ink**

**713-522-4546**

1311 Willard • Houston 77006

[www.laserinktx.com](http://www.laserinktx.com)

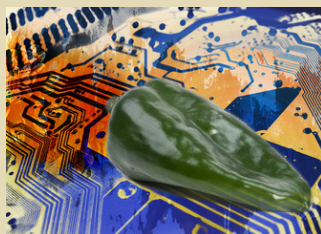




# CONTENTS

FALL ISSUE 2009 • VOLUME 23 • NUMBER 7-9

## INSIDE



### The Electric Jalapeño

#### A new system via Windows 7

##### Comments

With the introduction of Windows 7, I thought it was time to review an advanced system powered by the new Windows.  
page 5

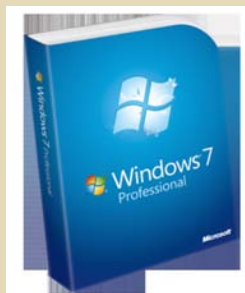


### The Electric Jalapeño

#### A new system via Windows 7

##### Hardware Review

Each sub-system is independently reviewed and in no particular order – from CPU cooler to an exciting video board and high end hard drives and all devices in between!  
page 6



### Some Ideas Concerning

#### Your Move to Windows 7

YOU need to take a few minutes and decide what you want to migrate from the pre-Windows 7 system to your new Windows 7 O/S (operating system).  
page 13



### Windows 7 is Here

Before beginning your installing Windows 7, create a plan that details what's on your original system, where it is going to wind up on the new system, configurations, and how you are going to get from one to the other.  
page 14

### Back Cover HAL-PC Membership

## ON THE WEB

For the latest information about SIGs, Events and Classes, please visit the **SIG, Event and Class Calendar** at [www.hal-pc.org/calendar/calendar.php](http://www.hal-pc.org/calendar/calendar.php)

For information about Senior Learning Center Mini-Courses, visit <http://users.hal-pc.org/~slcweb1/>

## POSTMASTER

HAL-PC (ISSN 1069-3467) is published quarterly by the Houston Area League of PC Users, Inc.

Periodicals postage paid at Houston, TX  
**POSTMASTER:** Send address changes to HAL-PC  
4543 Post Oak Place Dr., Suite 200  
Houston, TX 77027-3103



## HEADQUARTERS

4543 Post Oak Place Dr. Suite 200  
Houston, Texas 77027-3103  
Telephone: 713-993-3300

### www.hal-pc.org

Hours Monday thru Friday  
9:00 a.m. to 9:00 p.m.  
Saturday 9:00 a.m. to 5:00 p.m.

### Clear Lake Office

400 Medical Center Blvd, Suite 210  
Webster, TX 77598-4227  
281-316-0768

### www.hal-pc.org/~slcweb2/

Hours Monday thru Thursday  
9:00 a.m. to 4:00 p.m.

## HALNet Service

HAL-PC has brought high-quality, low-cost internet service to Houston and the surrounding area since 1994! Dial-up access is available Nationwide, ISDN connections are available at dial-up rates to those who cannot receive ADSL, and broadband ADSL service is provided to ATT phone customers within the Houston LATA. Contact us at 713-341-8185 or [macdavid@hal-pc.org](mailto:macdavid@hal-pc.org) to verify your phone line qualifies for ADSL and compare our rates and service plans! HALNet gives you home-town customer service, competitive rates and an alternative to the faceless corporate providers. Support choice! Check out HALNet!

## HAL-PCs AWARDS

**HAL-PC User Group World Award**

### HALNet

Five Star Selection for Technical Excellence

### HAL-PC Magazine

Houston Press Club 1999 , 2000

Beverly Rosenbaum

Excellence in Journalism Award Winner  
Runner Up — "Best Design"

### HALNet

Best of Houston 1998

Best Locally Produced Website

Best Local Internet Service Provider

### HAL-PC Magazine

1st Annual Editors of Excellence Award

### HAL-PC Community Outreach SIG

1998 "Jerry" Award for Outstanding Efforts  
in Community Service

### HAL-PC Website

Best User Group Website/Large Group Category  
Houston may have the Meredith Long Art Gallery but...HAL-PC has the "Long" Meredith Gallery! The hallway at HQ is a historical sample of *HAL-PC Magazine* covers from our earliest days to more recent times. HAL-PC dedicated this gallery to our own Meredith Foster, who has produced our *Magazine* and its cover art since 1988.

*Member of the Association of PC User Groups*



A Texas non-profit organization

## Houston Area League of PC Users, Inc.

4543 Post Oak Place Dr., Suite 200

Houston, Texas 77027-3103

Headquarters telephone: 713-993-3300

### BOARD of DIRECTORS

#### Officers

##### President

John Furby

president@hal-pc.org

##### First VP - SIGs

Rick Archibald

vp-sigs@hal-pc.org

##### VP - Communications

Allan Holtzmann

vp-communications@hal-pc.org

##### VP - Programs

Robert (Bob) Stewart

vp-programs@hal-pc.org

##### Recording Secretary

Annette Story

secretary@hal-pc.org

##### Membership Secretary

membership@hal-pc.org

##### Treasurer

George Vaughn

treasurer@hal-pc.org

#### Directors

Greg Brewer greg@brewer.net

Kelly Brown kellyb@hal-pc.org

Mark E. Crain craindirector@hal-pc.org

T. Norman Crook ncrook@comcast.net

Robert E. Gunn reg@hal-pc.org

Kojo Idrissa kojo.idrissa@gmail.com

Will Beazley

Michael J. Lempel mlempel@hal-pc.org

Jerald Linsley jerald@hal-pc.org

Mary Ann Mitscherling maryann@hal-pc.org

John Molson molson@hal-pc.org

Chris Read readc@hal-pc.org

Robert Spotswood

robert@spotswood-computer.net

James R. Story astory@hal-pc.org

Russell Vesey russvhalpc@gmail.com

Jim Ward ward.director@gmail.com

### HAL-PC MAGAZINE

#### Staff

##### Publisher

Meredith Foster

713-993-3300

mfoster@hal-pc.org

##### Managing Editor

Carla S. Cawfield

carla@hal-pc.org

##### Columns Editor

Beverly Rosenbaum

brosen@hal-pc.org

##### Reviews Editor

Charles Evans

cevans@hal-pc.org

##### Handheld Computing Editor

Charles Olsen

colsen@hal-pc.org

##### Editorial Manager

M.L. Gigglesman

melgig@hal-pc.org

##### Contributing Editors

Chuck Horowitz

Carla Cawfield

Beverly Rosenbaum

Fred Thorlin

Mel Babb

Robert Schwartz

Robert Stewart

Charlie Sherwood

Robert Spotswood

ML Gigglesman

George Walker

Kathryn Killmore

Robert Du Vernay

Rodger Marion

Milton G. Gugenheim, Jr

Charles Olsen

##### Advertising

MacDavid Crook

713-993-3322

### HAL-PC INFO

#### Headquarters

Hours Monday thru Friday

9:00 a.m. to 9:00 p.m.

Saturday 9:00 a.m. to 5:00 p.m.

#### Staff

MacDavid Crook

713-341-8103

Operations Manager

macdavid@hal-pc.org

Open

713-341-8104

Registrar

registrar@hal-pc.org

Open

713-341-8102

Education, SIGs

Volunteer Coordinator

volunteer@hal-pc.org

#### Help Committee

Jim Story

volhelpcoord@hal-pc.org

#### Clear Lake Center

400 Medical Center Blvd • Suite 210

Webster, TX 77598-4227 • 281-316-0768

www.hal-pc.org/~slcweb1/

#### Vendor Liaison

www.hal-pc.org/vendors.html

#### DSL Coordinators

Doug Kneupper

713-341-8185

9-6 Mon-Fri

#### If You Move

Send address changes to:

HAL-PC Change of Address

4543 Post Oak Place Dr., Suite 200

Houston, Texas 77027-3103

#### When should you expect your Magazine?

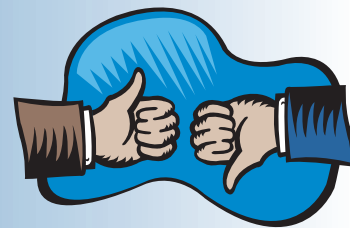
The *Magazine* is printed and mailed four times a year. If you do not receive your copy, notify the office at 713-993-3300 no later than the 9<sup>th</sup> of the month between 10:00 a.m. and 3:00 p.m. If your address, etc. is correct, then go to your local post office and ask for expedited delivery.

COPYRIGHT © 2009 by Houston Area League of PC Users, Inc. ('HAL-PC'). All rights reserved. No part of HAL-PC may be reproduced or transmitted in any form or by any means—including, but not limited to, photocopying, recording, or information storage/retrieval, without express written permission from HAL-PC. However, articles may be reprinted without permission by other user groups provided the articles are reprinted unaltered and the publication acknowledges the author thereof and HAL-PC. Contact the DEX editor for information regarding the exchange of articles on diskette (DEX). HAL-PC is published monthly by HAL-PC. Subscriptions are included in the cost of membership. Trademarks used herein are indigenous to the IBM and compatibles marketplace and are hereby acknowledged. Articles, programs, reviews and advertisements are compiled without verification of accuracy or applicability to a specific task or computer. Any comments or claims are made solely by the individual author and do not necessarily represent the views of any other HAL-PC member or other person, living or dead. HAL-PC is not connected with or endorsed by International Business Machines Corporation or any other manufacturer or dealer. HAL-PC<sup>SM</sup> is the service mark of the Houston Area League of PC Users, Inc.

# The Electric Jalapeño

## A new system via Windows 7

### Comments



CHARLES W. EVANS

#### Preface.

**One of my toughest, but most rewarding, responsibilities is to review a computer system. The sub-systems are not as difficult because they are specific.**

However, with the introduction of Windows 7, I thought it was time to review an advanced system powered by the new Windows. To keep you from being overwhelmed, I've divided this review into two parts. This month is the review of the computer and major sub-components with a few details. In the next issue, I'll include additional specifics plus tests results, especially if your interest is games and/or over-clocking.

You may not have a direct interest in the second part, but I'd still strongly suggest you read it just to familiarize yourself with some of the terms. You'll find this handy when you buy a computer or replacement part. The second part includes results of nationally recognized tests by BAPCo and SiSoftware. When you are ready to buy, or read a product's brochure, you'll have a handy reference to any "technical numbers" they provide.

You'll not likely find many negatives in the review of any of these products simply because I've tried to select the best quality consistent with

a price/performance value. There's nothing cheap about any of these products.

In addition, I've attempted to find some degree of "green" in as many as possible. Power supplies and CPUs are among the first to have a green tinge, although your video card requires massive amounts of electrical nourishment! A few watts here and a few watts there soon add up to a lot less oil.

Last, and most important, is the purpose of this review and all others in the *Magazine*. Even though you might buy a complete computer from Dell, HP or off-the-shelf at your local retailer, you'll be better satisfied with your purchase if you have some basic computer knowledge, understand terms, etc. And that is the purpose of any review: to assist you in becoming an "informed consumer" so you can

separate the facts from the sales talk that fulfills your needs and not the salespersons' pockets. This is not to suggest salespeople are not honest, but the person in the mirror puts your interest first.

The reviews are the work of fellow readers who commiserated with each other to arrive at a result. This review does not include Windows 7. I will try to get that review to you when the formal version is available, maybe in early October.

I like to publicly thank and acknowledge the invaluable assistance of Build or Buy SIG's guru, George Walker. This review would not have been possible without him. Work progress photos are by Robert Du Vernay.

Enjoy!

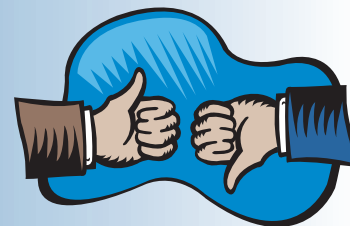
Charles W. Evans,  
*Reviews Editor* ■





# The Electric Jalapeño

## A new system via Windows 7 Hardware Review



### THE REVIEWS TEAM

**Each sub-system is  
independently reviewed  
and in no particular order  
– from CPU cooler to an  
exciting video board and  
high end hard drives and all  
devices in between!**

### Antec P183 Case: Rodeo Drive Styling



Antec's P183 is a high-end mid-tower case. It is based on Antec's P193 without the side fan and one of the top fans and also with the remaining top fan reduced to 120-mm, making it less expensive than P193. Let's see what you should expect from P183. First, you notice there is significantly less noise due to the 3-layer side panels. And there are lots of places for hard drives, memory, add-on cards, etc. - a generous mid-tower case in gun metal steel that just oozes quality in this style-conscience enclosure.

The Antec P183 chassis is an example of what happens when you

think outside the box and design something from the ground up. Several of the design features are unique to this chassis and make it stand out from the crowd. Sure it looks great, very stylish and presents itself well. In fact, we decided it was nice enough to take home to meet our mom. Well engineered and designed with no sharp corners or ill-fitting nooks, it arrived with two 120mm fans controlled by an exterior, multifunction switch on the back. We added a third up front to cool the hard drives. You'll get significant amounts of air intake through the front mesh grills whose filters are washable.

This case has rolled edges to keep your hands out of harm's way and add sturdiness to the case. Inside (see picture) there are four separate chambers: the bottom one is for the power supply that draws air from the bottom of the case; to your upper right are compartments for optical drives and anything else 5.25"; underneath is the hard drive compartment with two pull out "cages" for up to six hard drives. Then the larger open compartment to your left is for the motherboard, coolers, etc. The left access panel has two thumb screws and is easily removed.

The "front door" swings back left and around to the side of the case. We prefer it to swing right so it is out of the way when working inside the computer. It is thoughtful that the USB and e-SATA ports are accessible when the door is closed. There are air vents on either side of the door. Although a mid-tower, it is a bit larger than typical. We did find it was uncomfortably close between the HD's and the video card.



### Pros

1. First-class quality – gun metal steel plus a few plastic parts
2. Six hard drive bays in two cages that are removable – include dust filters
3. eSATA port
4. Two USB ports
5. 3-Speed control for two, Tri-cool fans
6. Three-layer side panels for noise abatement
7. Noise-reduction mechanisms (rubber shock absorbers) for the hard disk drives

### Cons

1. Could have come with thumbscrews fastening the left panel.
2. Door should hinge to the right
3. A bit expensive, but the price is right for this quality

Antec has dropped the Firewire port which is OK since Firewire was never popular on PC's. The whole exterior of the case just has a really nice tactile feel to it. You now have to

remove the doors themselves to clean the filters.

The entire rear PSU plate is now removable. This is to accommodate the new PSU form factor CPX introduced by Antec. The larger form factor allows for better PSU design with improved airflow also.

Until you crank up the fan speed the temp is normal. At this point the motherboard benefits from the two exhaust fans mounted near the CPU socket, the motherboard temperatures drop by 6° from 45° to 39°. Switching to medium or high on the fan speed also saw a vigorous drop in the CPU temperatures down from 46° to 41° on both settings.

Yes, this is a fairly expensive case, but it is exceptionally well built and designed. If you move your case around or just plain appreciate something grand looking, buy a P183. Go to [www.antec.com](http://www.antec.com).

### AMD 945 Phenom II X4 CPU: Tiny Transistors on Steroids



Everyone gather 'round AMD's most capable CPU. OK, there are two faster ones on the market, but this one is the most cost-effective. This quad-core 945 puts out a lot of horsepower for your buck! For a number of years AMD has been in a sort of "*woe is me*" funk. Always playing catch up to big bro Intel. Well, congrats AMD, I think you've done it.

This CPU is the heart of our system. But, alas, you cannot overclock it. You'll need the more expensive 955 or 965 models. But it does fully support DDR3 memory.

#### Summary:

The power to perform brilliantly whatever you demand of it: from complex PowerPoint presentations, illustrated Word docs or digital media, it races through multitasking in no time. We've never had a problem with this rock-solid chip. It is a feature-rich chip that runs fast, very fast, offers exceptional quality at a competitive price. Many fast chips run hot, but not this one. It is a 95 watt chip and under normal loads, is just warm. Extra features just add icing to the electronic cake.

The Phenom II series processors offer great performance for the money. And the Phenom II series processors are slowly, but surely, improving like a fine scotch.

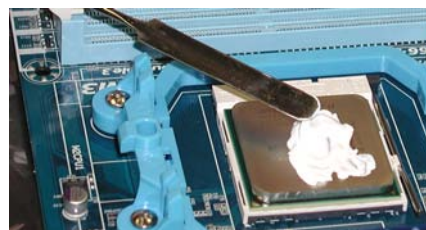
Select your mobo carefully. Not all support the AMD 3 chip and not all support higher end RAM (DDR3). What does all this "AMD3 and DDR3" mean? It is the newer, heftier technology to improve your computing experience. While we're in specifics, the 945 chip runs at 3.0 GHz – each of the four parts or cores can run independently. They can run together at 3.0 or you can configure them to run four different tasks on separate parts/cores. Its more expensive cousin, the 955, runs at 3.2GHz and it is "unlocked", which means you can tweak it and overclock it (voltage, etc.). Sorta like buying a higher speed chip for less money. Our next issue will include performance test results and overclocking. HyperTransport is also included in both chips. But no overclocking this chip. Booo.

Both feature a total 2MB Level 2 cache; 512KB *per core*. But: a big change is the increase in Level 3 cache. Phenom II can use or address 6MB L3 cache shared among cores as a buffer, so it can exchange data in-between the four logical cores. That's 8MB of cache and yet we've not even accounted for the

512KB total L1 per processor. We know this is techie stuff, but some readers will know how to use it.

A nice feature: DDR2 and DDR3 compatibility on AMD 790 FX/GX chipsets

L3 is where the enchantment happens, though, and is probably the reason for Phenom II's success. How about a look-see at a processor die? (See the first picture in this review.)



The price difference between Intel's i7 and AMD's 955/45 is narrowing. That translates into price versus performance, of course. Core i7 X58 motherboards these days start at 195 USD where you can pick up an AMD 790FX motherboard for 110 USD. That is something you need to keep in mind. Again, price vs. performance.

Compare Core i7 920 versus Phenom II X4 945 with ordinary daily applications, you'll not notice a real difference. Gaming? We don't find a dime's worth of difference. When it comes to gaming, your graphics subsystem is 95% of the limiting factor. We used an ATI Radeon 4890 video card and it is a real performer.

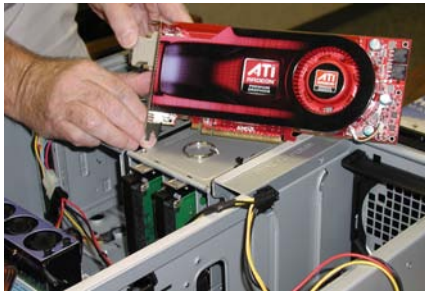
We'd advise you to spend the extra 25+ bucks to get another 200 MHz of performance and the flexibility to tweak the processors really well. The Phenom II X4 955BE AMD brings a very mature, fast and stable processor to the market. If you crave some more performance, for a few dollars more, buy the Phenom 955.

AMD's Phenom II processors are exciting. We can't say anything other than, this...as a platform this entire infrastructure works out especially well for both AMD and you, the end-user. We like what AMD continuously brings to the table. And though these are relatively small incremental updates over time...try to imagine where AMD was a year ago with Phenom 1.



For more info and updates surf to [www.amd.com](http://www.amd.com).

## ATI Radeon HD4890 Graphics: Virtuoso Visual Performance



ATI has upped the ante in its competitive fight with NVIDIA. For years these two champs have had a video slug fest for winner in the video card market. The HD4890 is one such card. While not being radically new, this is definitely a few steps above the already powerful HD4870 and it includes some significant changes. If you are into digital media, gaming or any other app that demands muscle, this card may be your champ. Oh yes, it is easy to overclock.

This board is hot in performance and fairly hot to touch. Heat is taken care of by a well-designed, enclosed fan/exhaust system – heat goes right out the back of the case. There is a more capable ATI card, the HD4870-2, which is essentially two video cards in one. But we aren't *that* serious about video...yet!

In the next issue we'll have serious performance results. This time, let's stick with some basic specs from ATI:

**Interface:** PCI Express 2.0 x16 bus interface

**Core Clock:** 850 MHz

**Memory Clock:** 975 MHz, 4.2 gbps

**Memory Interface:** 1024MB/256bit GDDR5

**Cooling:** Enclosed, on-board exhaust heatsink/fan

**HD:** HDMI compliant - nice

**Audio:** 7.1 Audio Channel Support  
**DX Version:** Microsoft DirectX 10.1 support

**Shader model:** Shader Model 4.1 support

**I/O Output: Display:** Two DVI & one S-video

With all the operations on this board and a fan running at top speed, this board is certainly the quiet one. There are enough other fans in the case to make noise – thanks ATI. The variable speed fan increases RPM to handle additional heat loads.

OK, you got us! We have already played with overclocking – that world of esoteric gurus! If you are overclocking the core, you may just as well overclock the memory to the max as this card's cooling can clearly take the heat. And while we are in the virtual confession booth, we also began to play *HAWX* (a character, not the skateboard guy). None of us has played games in a while and we all were just blown away by this game and how exciting the HD4890 makes it. Back next month with details. How 'bout *Need for Speed: Undercover*?

Your package includes the video card, install CD, etc. plus a dongle or adapter (VGA to DVI). Your power supply will need *two* power cables to feed this hungry puppy. I told you it had muscle, so now you need to feed it – about 190 watts. NOTE: some less expensive power supplies have fairly short cables – check cable length first and then buy.

### The Good

- Best cooling solution this side of water cooling
- Excellent specs
- Excellent overclocking ability
- Advanced video support: HDMI, Blu-ray, etc.

### The Bad

- Location of exhaust fan
- Conservative GPU overclock
- A tad long – put those transistors on a diet!
- Pricey

### The Ugly

- Nothing, zero, nada - OK, OK, it loves electricity.

One of us likes to crank up the details and have awesome frame rates on a large display, these cards do that flawlessly. Tear through the latest games with seamless frame rates and go beyond HiDef. GPU stands out

from the rest with massive graphics processing muscle.

We don't have this powerful feature in our system, but you might. Just a note from ATI about their **CrossFireX™ Technology**: it will support up to a quad (4) GPUs and it offers superior scalability. It is the ultimate multi-GPU performance gaming platform...to move faster, aim quicker, and see more clearly than all who stand between you and victory... before tea time.

The *Catalyst Control* is ATI's "driver" or control panel and it comes with an overclocking utility which we use, but it is only so-so. As we've said, not much overclocking this month. This control panel has about all the features and adjustments you could ask for, including which of two monitors you want to use.

Each high-end graphics card will always get a spin-off product. For the Radeon HD 4870 that meant the Radeon HD 4890, launched in April. Many manufacturers jumped onto that bandwagon and we right now are seeing a wide range of the most astounding capable Radeon HD 4890 cards.

For more info go to [www.ati.com](http://www.ati.com).

## PS: Tom Clancy's HAWX Game

With *HAWX* (air combat game) we enter a new level. There are well over 50 planes in the game, each of which carries a destructive payload. You'll need it, as you'll engage multiple hostiles across war-torn but still gorgeous-looking terrain. However, you won't be alone, and you'll have the option of issuing orders to your fellow squad mates.

Visually, the game's impressive, especially when flying in close to cities, which really shows off the building details. But it's when the game pulls into the third-person perspective while you dog-fight that the game flaunts its visuals and you really see much of the environment. *HAWX* and our HD4890 are perfect partners. DirX 10.1 mode brings additional performance into the gaming arena alright; as such, it is totally dominating this test.



## Seagate Barracuda 1.5TB Hard Drive: A Workhorse



Why install 1.5 tera bytes of storage? OK, why two drives? First, with the surge in digital media, what we considered a “lot of storage” is now just adequate and price is so right - think about 1.5 terabytes of storage costs less than 8 cents a gigabyte. Now *that’s* cost effective storage - a seriously cost-effective choice. And it is a high transfer SATA drive. For such a high capacity drive moving at 7200 rpm, it is surprisingly quiet - remember there are two.

Second question, why two? We’re like most of you. We don’t have a backup strategy and frankly, we do little backup. The second hard drive is a “mirror” (RAID 1 configuration) of the first, and becomes our auto backup drive. At least that was our original intent until a well-respected guru suggested otherwise. We still think it will work, but as he points out, you “automatically copy onto the second drive what you have on the first drive.” “And that’s the point” we said. He responded, “yes, but that includes virus and malware copies as well”. Well, ‘nuf said and a valid point. You decide.

Seagate has long been both an innovator and a crowd-pleaser in terms of data storage technology. The new ST31500341AS is the latest in a long line of Barracuda drives, with a storage and speed seldom seen. Designed with noise- suppression engineering and state-of-the-art speed and power on the surface, this Seagate

drive has muscle. It’s got 32MB of cache, spins at 7200 rpm, supports NCQ (native command queuing) and SATA I/O of 3.0gbps. But how does the drive perform? We stacked up this Seagate behemoth against two other 1.5TB drives. Oh yes, early 2009 there were some problems with the “firmware” - not the physical drive. This has been fixed.

### Some basic specs:

1. Spin rate 7200 rpm
2. Interface - SATA 3gbs transfer
3. Seek time - active: 8.3ms
4. Power - 9-11 watt operational, less “sleeping”
5. Cache - 32MB
6. Warranty - 5 years

### Basic performance:

1. Average read under RAID 1:
2. Seagate 1.5TB - 166
3. Hitachi - 160
4. Western Digital Caviar - 169
5. Burst Transfer for the three above averaged approximately 220% higher

Seagate turns in slightly better read and write performance and burst transfer speeds are pretty even across the board. However, this particular Seagate drive seems to have random access speeds slightly slower. Installation? Making a cup of coffee is harder. Just carefully remove from the anti-static bag, slide into the computer and connect it to the SATA slot on your motherboard. Just could not be easier. Seagate supplies a bag with the SATA cable, a helpful CD with utilities, etc. and a useful pamphlet.

Huge capacity; good price; impressive areal density; and, fast transfer speeds. The Barracuda’s transfer speed is fast considering it has eight read/write heads to move around. You have to weigh the overall performance differences against the vast capacity of this drive, as well as the price. Seagate’s Barracuda 7200.11 1.5TB drive is a touch slower than the competition, but offers tremendous capacity at an affordable price. Summary: Good reliability, Good capacity, Good price. Good buy. For more info go to [www.seagate.com](http://www.seagate.com).

## Corsair XMS3 DDR3 1600C9 Memory: Excellent Speed and Value



Corsair’s new XMS3 1600MHz C9 memory arrived with sufficient 2GB “sticks” to fully populate the RAM. The DDR3 speed of 1600MHz is significant amount of speed right off the bat without any **overclocking**. If you’d like to speed things up, you can (as we’ll do later) jack up the voltage a bit. We are adding a Corsair RAM air cooler to cool off these fast puppies. A year ago the price of the newish DDR3 was expensive. Today, the price is quite different. Considering you are getting some top-speed 4GB kit for this price, I would say that DDR3 is within reach to most enthusiasts now, not just the wealthiest few.

### Basic Features:

- 12288 Megabytes of DDR3 memory
- DHX technology provides *maximum cooling*
- Six matched 2GB modules - each tested and immediately packaged together
- 100% tested at 1600 MHz DDR3
- 1600MHz latencies of 9-9-9-24
- Lifetime warranty

Why anyone would build a system with a 1600 MHz front side buss processor and 1066 MHz DDR3 memory is a ambiguity. But what it does allow us to do is swap out those modules for the new Corsair XMS3 DDR3-1600C9 modules and see what performance gains we can achieve.

Like the older sibling, DDR2, DDR3’s XMS3 DHX feature Corsairs patent-pending DHX technology - an innovative quad-layer heat sink design that optimizes memory performance and reliability by *maximizing thermal dissipation*. With DHX



Technology, heat is removed via two paths—the leads of the BGA chips into the PCB (*convective cooling*) and the back of the BGA packages into the custom-designed extruded aluminum heat sinks (*conductive cooling*). This engineering design helped us well in the last review using Denominator DDR2. Never a problem.

You can see from these benchmarks that the new Corsair memory modules improved on the system memory bandwidth quite a bit: from 7.92 GB/s up to 8.54 GB/s. That is a difference of about 7.5% - not bad for such an easy swap.

In our first test, the memory read speed, the new Corsair XMS3 DDR3-1600C9 modules are running faster with a 10.36 GB/s score while the original memory ran at 9.2 GB/s: that is a 12% boost with the 1600 MHz modules. We found it runs a little hot, but we countered it with help of the adjacent CPU cooler that is off-center and a DDR2 memory fan cooler module.

After running through these simple tests I decided to quickly play around with how fast I could overclock these modules. I first bumped the voltage on the kit to 'prox 1.81v in the BIOS. I was able to easily hit 'prox 1760 MHz without much effort. Note: next month we'll provide more and specific performance results.

Most readers would consider memory modules to be moving towards a commodity item for a gaming or enthusiast PC – we don't buy that. The market will demand higher and higher performance. Corsair will be there to accommodate them. Corsair XMS3 DDR3-1600C9 kits are becoming more and more popular – these are memory configurations that are both fast and easy to install. There is little-to-no legwork necessary by the end user to reach these speeds and that is what MOST users want.

"Depending upon who you talk to in the industry, DDR3 is either hideously expensive and marginally pointless, or it's the best thing since sliced bread."

The future may be bright but the current problem is that DDR3 is

still expensive and only a handful of chipsets support it.

DDR3 will gain significant traction in 2009 as Intel's Core i7 processor increases market share. AMD, too, will move on over to a DDR3 memory controller on its high-end desktop CPUs. If you choose the DDR3 route it makes sense to go right in and buy 4GB, because anything less and Windows will just chug along.

Enthusiasts who can't get enough speed find this is a real adrenaline rush! For those who simply want fast memory for a decent price that can be tweaked at the user's discretion, the Corsair XMS3 DDR3-1600C9 memory kits are an excellent value. For more info go to [www.corsair.com](http://www.corsair.com).

### Corsair HX850 Power Supply: Efficient Green Electricity



A quality power supply will not only promote system stability but it can also save on your electricity. It is becoming more and more evident that we are pushing efficiency. The 80Plus designation has allowed manufacturers to give potential customers a solid certification to better determine their power savings. Corsair's HX850 is one of the best examples of looking ahead.

For a large power supply, it is very quiet, in large part due to its thermally controlled 140mm fan that dominates the top side – high speed when there's a load and less when not.

While Corsair has increased efficiency, it has made a determined effort to maintain high component quality.

This power supply promises to propel Corsair to the top of the totem pole. For example, using DC-to-DC conversion, yields close to 90% efficiency and using solid state

capacitors means you'll have years of this efficiency.

Even though this power supply is part of their new "Professional" series, you might think that the HX850 is nothing more than a TX850, a pretty face at a higher price. Fortunately, there is much more lurking below the surface of this product. This unit is engineered on a completely different platform from anything that has been previously available and it has earned an 80Plus Silver rating.

And the cost for all this good stuff? Considering the total package, compared to other 850 watt power supplies, you'll pay a modest premium. However, with Corsair's tradition of great customer support and one of the best warranties in the business at *seven years*, we think customers might pay a slight price premium for their products.

The HX850 has exactly what we want to see in power supplies of its caliber: a substantial +12V rail and a combined 840 watts of power. This is essential for today's high powered systems which consist primarily of +12V hungry components like video cards and CPUs. *Granted, you typically run your system on less than 500 watts, but surge and/or start up power needs are much greater.* Poor power can quickly compromise your entire system...poor power from any vendor. Brownouts hurt your system more than blackouts.

#### A few basic specs:

1. Up to 90% energy efficient
2. Single 12V rail provides up to 70 amps
3. 105C solid state capacitors
4. Supports ATX12V 2.3 and EPS 12V 2.91 standards, compatible with ATX 12V 2.01
5. Auto switching circuitry for variable AC from 90-264V
6. Size: 105mm W x 86mm H x 180mm D
7. Safety approvals from FCC Class B and UL to European and Japanese standards

As for packaging, well that's just too cool. Let it be a welcome surprise. We can tell you there are more than

sufficient special cables and adequate length. Just pack the extras away in the handy carrying case...oops, we shouldn't have said that. Kudos to the Corsair marketing folks.

80 Plus Silver is the official industry designation and a part of the *Energy Star* initiative. Save money while being environmentally conscious. This certification provides a great quick-reference point for the masses but as we already stated, it is not a requirement for manufacturers to have their PSU 80 Plus certified.

The modular interface is simple yet effective and eliminates the possibility that you will plug a cable into the wrong connector.

As a practical matter Corsair's cable management allows a user to *connect only the cables s/he really needs* to wire the rig neatly (remember 2<sup>nd</sup> grade? well neatness still counts!). There are 12 HD and 12 SATA plugs, enough for very well equipped file server. With the six 6+2 pin connectors you'll can power triple-SLI systems as wells as triple-Crossfire rigs.

We recommend the Corsair HX850W without reservation to anyone who needs a stable system and a significant, efficient power source. Therefore it doesn't matter if you're a gamer or hardware-buff. The HX850W is stable and provides your rig with plenty of muscle. For more info and downloads go to: **www.corsair.com**.

### **Zalman 9700NT CPU Cooler: Gentle wind power.**



Overall, a well-made and practical CPU cooler. It is a biggie however; about the size of a small grapefruit. Zalmann has a long history of

producing innovative designs that are well-engineered. Like any CPU fan, just measure carefully so both cooler and its surroundings can coexist. We thought there'd be sufficient space between the cooler and fourth stick of RAM – not so, when you install the memory fan.

Their coolers are designated CNPS, which stands for Computer Noise Prevention System. It surprised us how quiet this large set of fins and fan were. It weighs about 750+ grams. If your cooler is over 500 grams, it is recommended that you remove the cooler before moving your system. As you can see, when the case is upright, it hangs perpendicular to the motherboard – a considerable shearing weight.

Coolers earn their keep by transferring heat from the CPU to the air blown out of the case. There are copper "heat pipes" that absorb heat from a heatsink attached to the CPU. This heat is carried to the radial fins by the six heatpipes and blown away by the attached fan. This fan promises high performance while the Zalman name promises quiet operation.

The Zalman CNPS 9700NT about 145 mm tall by 125 mm wide. The box contains hardware for a number of different CPU models. The fan is 110 mm. The fan is powered from a four pin PWM (Pulse Width Modulation) plug seen on many P4 boards. You can use the included *Fan Mate 2* controller to manually control the speed of the fan.

One was not included in our retail package.

#### **Features:**

1. Sturdy and well-engineered
2. Outstanding cooling dissipation
3. Unique and highly effective fin design
4. Quiet operation
5. Variable rate fan
6. Straightforward installation

This is an excellent cooler for enthusiasts looking to overclock their computers, and for anyone who appreciates a quiet cooling solution. It offers great cooling and very low noise.

Second notice: Check the dimensions to insure it will fit in your case. Odds are, if you have a 120 mm exhaust fan in your case it should fit.

It comes with its own backplate. The backplate and mount screw right in and after you apply thermal paste to the CPU the cooler screws right into the mount. The included directions and a little common sense are all you need.

Temp is 40C with all GREEN in the S.M.A.R.T. monitor and the fan running at about 2400 rpm. Now this is a device for those who exceed the typical system heat tolerance. For more info and a wide range of cooling devices go to **www.zalman.com**.

### **AeroCool Touch 2000: Fan/Temp Control**



AeroCool's newest fan controller and temperature monitor display panel is enclosed in a very stylish, hair brushed case with an LCD *touch screen*. Do you absolutely need a Touch 2000 type of device? The answer is simple: No. So why? If you are a gamer or inclined to overclock your system, then you will need this type of device. For the rest of us, it is an excellent system monitor.

Fan controllers make it far easier to manage your system's airflow and temperature. With the Touch 2000 you connect and monitor up to four fans with a single integrated control panel. The touch screen displays the speed for each connected fan and provides individual temperature in either Fahrenheit or Celsius. Motherboard-based monitors really aren't that accurate.

If you are away when the alarm starts, you won't be alerted if a fan stopped or if a temp is





too high because the alarm volume is way too low. AeroCool should add a blinking light for the hearing impaired. Touch 2000 has included a multi-lingual, simple and intuitive manual, explaining basic usage, and a HiDef audio cable, a SATA cable, two extra temperature probes, securing screws, thermal tape and an internal USB cable

It is not possible to connect fans with four-pin connectors ("Molex"). In order to make adjustments you need first to *unlock the panel*, which is done by touching the lock icon. This prevents you from accidentally changing your configuration. The panel also shows the rotating speed of each fan.

Temperature alarms can also be programmed individually for each sensor, from 25 °C to 90 °C. The alarm not only warns user about high temperatures: when activated, it also increases fan to max speed.

The only drawbacks we found are the lack of a feature that disables unused fan channels and adaptors to use fans with other types of power connectors. The fan light keeps blinking if not connected. Also, no visual alert. The audio alters are basically non-existent.

The AeroCool Touch 2000 is a first-rate product that will satisfy any enthusiast or gamer. It provides touch screen fan control and temperature monitoring, plus eSATA, USB and audio connects all in one well-engineered package including overheat notification. We strongly recommend the Touch 2000 for those who need thermal control. For more info go to **[www.aerocool.us](http://www.aerocool.us)**.

HAL-PC and HALNet now offer automatic recurring credit card payments. Have your membership and access put on a recurring account today. Telephone, Fax or Email your request!  
Voice: 713-993-3300  
Fax: 713-993-3333  
Email: registrar@hal-pc.org

## Cobra D984 CPU Cooler: Arctic Breeze



Xigmatek's newly designed CPU cooler, the *Cobra D984* takes the heat off your CPU. Why this model? One, it incorporates the new heat pipe direct approach. That is, the "pipes" that carry heat away from the CPU actually touch rather than use an intermediary, such as a heat sink. Second, our cooler space is limited, so its off-center design does not intrude into the memory slots and permitted a fully populated memory.

Our original cooler is quite powerful, but exceeded the space allowed. This off-center design moves the cooling fins and fan off to the side opposite the memory. A win-win situation device.

There are several other features that caught our eyes. One, it has an extensive mounting package to accommodate a number of different CPUs. The quality just oozes – from the tightly engineered heatsink/

pipes to the fins. The 92 mm fan is top-mounted and simple to install and insures efficient airflow. The fan moves air through the fins from 40-55cfm and operates in a range of 1200-2800 rpm – depends on the cooling need of the CPU. All-in-all, a very quiet cooler – no loud roar when the rpm maxes.

Actual cooling? We performed three tests, but the one that matters most is how much heat is removed from the CPU. On average, it reduced the heat by 8 degrees, *depending on the system load*. Basic stats: standard cooler about 80-85% loaded was 75C and the Cobra averaged 6-9 degrees cooler.

Even with the smaller 92 mm fan, this little cooler does a superb job at keeping an extremely loaded AMD 945 under control. The flattened heat pipes touching the CPU actually remove extra heat. The backplate installation of the Cobra is a wise choice by Xigmatek, as it's likely preferred by most people over the antiquated push pin system.

At 452 grams it is sufficiently light enough so you need not remove it when moving the case about. The PWM based fan works exactly as it should.

An elegant design that works hard to remove heat from your CPU and does so quietly – oh, thank you Madam Cobra! Cost? Reasonable, so check around. Now go to **[www.xigmatekusa.com](http://www.xigmatekusa.com)** for more info. ■

## F. A. ARCHIBALD III COMPUTER CONSULTING

Windows      Networking      Linux/Unix  
Desktops      Servers

[smxrick@gmail.com](mailto:smxrick@gmail.com)

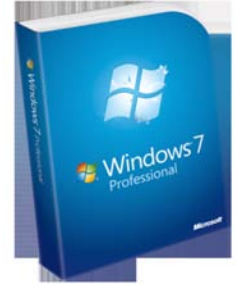
**Rick Archibald**

713/862-7368 Office

713/417-4785 Cell

# Some Ideas

## Concerning Your Move to Windows 7



ROBERT DU VERNAY

### IDEA(s) concerning moving to Windows 7 from

- Windows XP or
- VISTA or
- Windows 7 release  
candidate . . .

First and foremost, I cannot offer any guarantees, warranties or anything else and I don't work for Microsoft. All this does is take you back to some very basic position of being very careful. This is exactly what Mr. Gates' boys are suggesting you do.

YOU need to take a few minutes and decide what you want to migrate from the pre-Windows 7 system to your new Windows 7 O/S (operating system). Basically, you need to do a DATA backup. Not the O/S, or any of the installed 3<sup>rd</sup> party programs (programs).

You don't backup installed programs, you will re-install them under the new system. When you install a program, it puts some **hooks** to specific O/S files which is what causes problems, but makes the program work more efficiently. A 4GB flash drive or a single DVD disc will hold most of the stuff most of you have. I would expect you are not going to be moving your copy of *Gone With the Wind* as part of your backup file set. Your music, videos and photos should be backed up off line in any case, separately. Only you know what is important and what you can lose.

The creation of a DATA backup can be done thru any number of 3<sup>rd</sup>

party program or your current O/S. Nero, Roxio, Acronis, Casper look for the BACKUP option, or...you can also do this with a series of simple CUT & PASTE operations to your USB flash drive! But, only you know what is important.

Start by exporting your e-mail address book and your Bookmarks/Favorites. Whatever e-mail program you use will support this and the same for your browser program. So, we have so far: a DATA back up, e-mail address book, and Bookmarks/Favorites.

Back up or make copies of e-mail you want to save...right! Save the individual e-mails you want as HTML doc's. Windows 7 mail program is not as nice as Outlook Express, but it does have some nice features. Note that Windows 7 does NOT come with Outlook. Transferring and handling e-mail is not easily done. Plan on losing most of it, unless you are using a 3<sup>rd</sup> party program...IF you are, then investigate what options you have with that program.

If you have been playing by the rules, then you won't have any problems doing a DATA backup. If you have MULTIPLE logical drives and stuff scattered all over the place, good luck.

Secondly, if you are transitioning from VISTA, then you have already addressed the issue of DRIVER(s), and this part you can skip. However, if you are moving from Win XP, and have an older machine, then I would suggest you might want to see if you have all the current DRIVER(s) for all of your hardware.

Microsoft has a bit of software on their site which "qualifies" your

machine for VISTA. Old stuff. But if you don't have a problem with VISTA, then you won't have a problem with Windows 7 (VISTA on steroids).

*MyDrivers* can be found at **www.shangduo.com**; it is freeware.

It will do a survey of your system and let you create a backup image of your drivers. This is good, if you have to restore!

Now, if you need a driver for Win7 for a particular device, you will have to 1) ferret it out from its source, or 2) let Win7 find it for you. There are other programs which do the same thing.

There will be some wailing on drivers! *Not all devices will be upgradeable!* Because the manufacturers simply have not bothered to create new device drivers for Win7, that way, you get to buy NEW. Still, try the install with the old driver and tell Win7 to run the device as a Window XP unit. This does not always work, but worth the effort.

If you have decided to utilize the 64 bit environment, and are coming from a 32 bit world, the driver problems may well be magnified. HP for example, told me to go buy a new Scanner, there were no upgrades. The scanner in question is a \$550 machine and works very nicely in Windows XP Pro; hence I will be keeping one machine on XP Pro for a while.

Don't wait until the last minute! Look at your HD and review what you have and where you have it! Make sure you have the Install Discs for all the 3<sup>rd</sup> party stuff you have, including the Key Codes and serial numbers necessary for reinstallation. Made sure you know your current

**continued on page 15**

# Windows 7 is Here

and it is good and here's how to get there



CHARLES W. EVANS

## There is no substitute for prior planning.

**There is no substitute for prior planning.** (Oh! Did I say that twice? Hummm.) Before beginning installing Windows 7, create a plan that details what's on your original system, where it is going to wind up on the new system, configurations, and how you are going to get from one to the other.

And yes, it is OK to employ your original word processor to do this and it migrates easily to Windows 7... technically it's called a pencil and paper. ;-)

## Determine which edition of Windows 7 you need.

1. Is your hardware up to snuff?
2. Back up your data before you start the upgrade. Acronis TrueImage, Casper and Ghost are good back up programs and have been reviewed by the *Magazine*.
3. Update Windows XP or Vista data before you begin installing Windows 7.
4. As a rule of thumb, if it works under Vista it *should* work under Windows 7.
5. Before installing Windows 7, download the current Windows 7 drivers onto a flash drive or burn to a CD. This part of *being prepared*.
6. If you are using Windows 7 RC1, no upgrade is possible and you have until June 2010, when it dies. If it is on the hard drive you intend to use for Windows 7, format the hard drive. You will no longer have use of RC1.

## Four important notes:

1. Clean up your existing computer – really! Get rid of old programs and files and defragment your hard drive.
2. Your best option is NOT to upgrade – start with a clean hard drive.
3. You will be told that you CANNOT upgrade from Win XP to Win 7. Not so, but it is a convoluted process. I do not recommend this, period. But all is not lost. There are two ways to “salvage” your XP programs. One is to get a new computer with “V” certification; i.e., *virtualization* gives you capability to run your XP programs on a virtual hard drive *under* Win 7! There is a different route and that is to “migrate” your XP files to Win 7. I've listed a web site that will help you do this. There are some programs that will not successfully migrate. I'll explain later.
4. If you upgrade from Windows Vista, you must upgrade to a like edition. For example, Vista Home to Win7 Home or Ultimate to Ultimate.

Upgrading from one operating system to another is no longer as simple as inserting a diskette and pressing the Enter key. Questions arise about the right hardware, about compatibility of existing applications and data files with the new operating system. This article helps you think through the process of upgrading to Win7.

Windows Easy Transfer migrates your application settings and data, other options allow complete migration of both applications and data as a single operation. Windows Easy Transfer, which is *available for*

*free from Microsoft's website*, allows you to migrate both application settings and data from your XP system to a Windows 7 system. It even allows you to create a disk repository with this information. This is an acceptable method, but by no means foolproof.

Windows Easy Transfer lets you identify the programs and related data that you want to transfer and accomplish most of this migration work in one set of actions. The easiest workaround in transferring application data from Windows XP to a Win7 environment is to use Windows Easy Transfer on the Windows 7 DVD to transfer XP documents and settings to a backup location; e.g., flash drive or another hard disk, and then restore from this backup.

This would be a very good time to re-think your data storage location(s). Generally, Word will store your DOC files and other data created by Office under the Documents and Settings folders. Other programs will have a default location for the data you create. You might think about creating a partition just for the files that you generate. If it would be helpful, subdivide the partition by using folders for each type of file. In this method, you simply backup the entire partition and you have your backup accomplished.

## Following are some points you should keep in mind:

1. You can use Windows Easy Transfer to move both programs and all their associated data as a package, but before you get to that stage, make sure that the move will



transfer everything you want moved.

2. If you're using the move as an opportunity to upgrade from one version of an application to another (for example, moving from one version of Microsoft Office to another version), you should do two things:

- a. Verify that the new application is compatible with the new operating system (some applications that worked with Windows XP or Windows Vista may not work under Win7).
- b. Verify that the new version of the application will be able to use the data files from the older version. A good way to prevent problems like this is to use the same shared folders to store data on the old system and the new system.

## Migration versus Reinstallation

I recommend that you migrate a *software package intact*. At times that may not be an option since some software packages register a unique ID based on both the license key and the CPU. If you migrate from one physical system to another, or significantly change the hardware configuration, the ID may change, as will the unique ID used by that software package. In this instance, you are forced to reinstall the software. This is one reason you cannot simply move your existing hard drive from one system to another.

In a new system with a different motherboard, you would need to reinstall programs.

There is no substitute for prior planning. **There is no substitute for prior planning.**

(Oh! Did I say that before? Hummm.) I've listed four sources of information that I'd strongly recommend you download, print, read and make a few notes. I know, I know, we all thought we were through with homework in the 12<sup>th</sup> grade. Turns out life is just one big homework assignment!

## Microsoft Win7 Information

[http://technet.microsoft.com/en-us/library/dd446674\(W5.10\).aspx](http://technet.microsoft.com/en-us/library/dd446674(W5.10).aspx)

## Virtual PC 2007 – information about a virtual drive/PC

[www.microsoft.com/downloads/details.aspx?familyid=04D26402-3199-48A3-AFA2-2DC0B40A73B6&displaylang=en](http://www.microsoft.com/downloads/details.aspx?familyid=04D26402-3199-48A3-AFA2-2DC0B40A73B6&displaylang=en)

## Windows 7 Upgrade Advisor – advice on software/hardware compatibility

[www.microsoft.com/downloads/thankyou.aspx?familyid=1b544e90-7659-4bd9-9e51-2497c146af15&displayLang=en](http://www.microsoft.com/downloads/thankyou.aspx?familyid=1b544e90-7659-4bd9-9e51-2497c146af15&displayLang=en)

## Migrate to Windows 7 – Softpedia Information

<http://news.softpedia.com/news/XP-to-Windows-7-Upgrade-Scenario-Hardlink-Migration-109722.shtml>

## Windows 7 RC1 expires July 1, 2010

– you should have updated long before that date. Notice I said “updated” since you cannot upgrade RC1 to any Windows 7 version.

Don't rush it. You have time to do it right. And I think you will like Windows 7.

*Charles W. Evans is a HAL-PC member and the Magazine's Reviews Editor. He can be reached at [reviews@hal-pc.org](mailto:reviews@hal-pc.org). ■*

Use this search box  
Purchase from  
Amazon.com  
HAL-PC gets cash!



*continued from page 13*

passwords for your ISP (Internet Service Provider) Comcast/DSL/Dialup. You need to know that magic string of characters, and remember password(s) are generally CASE Sensitive.

So, if you are going to switch to Windows 7, either 32 or 64 bit O/S, there is a bit of PREP work to be done. If I said it will be painless, that would be a lie. But this is a good change, not all change is good. Vista was not good; Windows 7 is definitely better than Vista and a lot faster.

You will be doing all of this again in three years for Windows 8!

*Robert Du Vernay is a HAL-PC member and the Chief Instructor who conducts the Basic 101 presentations on each 1st Saturday. He can be reached at [rpd@hal-pc.org](mailto:rpd@hal-pc.org). ■*

## I WAS CONNECTED JUST EARLIER TODAY, BUT NOW I CAN'T CONNECT!!!

## I CAN'T GET MY EMAILS NOW, BUT EARLIER IT WAS OK!!!

If these are similar to your problems, then one solution may be to simply REBOOT your computer.

Most of the new computers made today are using software controlled modems and soundcards. Whenever there is a memory glitch these devices may stop working. Rebooting the computer will reload the device drivers and in some cases “fix” the problem ... until a memory glitch happens again.

To reboot properly, one should go to START, SHUT DOWN, “SHUTDOWN THE COMPUTER”, wait about 10 seconds then turn the computer back on.

*“Bob the modem guy”*

## HAL-PC MEMBERSHIP HAS ITS REWARDS!

Annual HAL-PC membership brings you many things. Most are well known: a year of our award winning *HAL-PC Magazine*, access to over 70 Special Interest Groups, discounts on tuition for HAL's education program and low-cost Internet access from HALNet.

Did you know that membership brings discount and other special offers from 17 local and national companies? Visit the HAL-PC website and click on the Member discounts link to get details on their offers. Remember, in most cases, HAL-PC members will get the discount by showing their membership card. So being a card-carrying member of HAL-PC truly does have its rewards.

### CLEAR CHANNEL ENTERTAINMENT

Visit the group sales website (**www.broadwayacrossamerica.com**) HAL-PC members that visit the group sales website and go to group sales log in and use this password: PCTICKETS will be able to get tickets to live events in the Houston area before sales are opened to the general public. The tickets will be discounted and the fees will be only \$2.50 per ticket. Tickets purchased will be picked up at HAL HQ. .

### FLIPALBUM PROFESSIONAL 5

Get a \$40 mail-in rebate when you buy FlipAlbum 5 Professional from Best Buy stores.

### LEAPFTP

Premier Windows FTP client LeapFTP is offering 33% off registration fee for HAL-PC members.

### IBM DIRECT

Offering an outstanding user-group discount to HAL-PC members on ThinkPad notebooks, NetVista Desktop computers, and xSeries servers.

### XAPWARE TECHNOLOGIES

Released a new software project management system, called Active! Focus. HAL-PC members will receive a 10% discount.

### NEW RIDERS

Web site is able to sell books directly they've created a discount coupon good for 20% off a HAL-PC member's total order.

### SCANSOFT

Registered User Group members are entitled to a 15% discount on ScanSoft's new release of OmniForm Premium 5.0.

### EREALTY.COM'S

HAL-PC is now an affiliate with eRealty.com's Real Estate Advantage Program (REAP). With REAP, you get up to \$500 in savings with eRealty's ePartners for each real estate transaction. HAL-PC members are entitled to a 20% discount on O'Reilly books and conferences purchased directly from O'Reilly.

### AXION TECHNOLOGIES

Discount 3% off their already low everyday price for all HAL-PC members

### ARCISOFT PHOTOISLAND

Special offer for HAL-PC Members -- 10 MB bonus storage space plus ArcSoft software.

### FONT SOURCE

Font Source is offering HAL-PC members a special where you can buy your full signature for \$19.95, and receive your first name in separate keystroke at no charge (a \$4.95 value). Conversion of a nickname or initials is regularly an additional \$9.95. For members, it will be \$4.95 for nicknames and/or initials.

### BLUE SQUIRREL

Blue Squirrel announces special HAL-PC pricing - save 20% on leading internet software - WebSeeker98, WebWhacker2000, and ClickBook.

### POWERQUEST SOFTWARE,

HAL-PC has its own permanent discount code for purchase of PowerQuest software, PartitionMagic V7.0, Drive Image V3 and DriveCopy V2.

### LEARNKEY

Mail or fax your order to LearnKey for 15% discount on product.

### O'REILLY

HAL-PC members are entitled to a 30% discount on O'Reilly books and a 20% discount on conferences purchased directly from O'Reilly. The discount code for HAL is DSUG. Place an order online at [www.oreilly.com](http://www.oreilly.com) or by calling 800-998-9938. ■

## HAL-PC MEMBERSHIP APPLICATION

Individuals Only. Companies, corporations, etc. cannot be enrolled as members of HAL-PC

Please Print. ☐ New Member ☐ Renewal Member No. \_\_\_\_\_ Exp Date \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code +4 \_\_\_\_\_

Phone: Include area code (h): \_\_\_\_\_

(w): \_\_\_\_\_

Annual dues are \$50

☐ Check enclosed. Check No. \_\_\_\_\_ Payor (if other than above name) \_\_\_\_\_

Charge my: ☐ MC ☐ Visa ☐ Discover ☐ Charge my credit card annually at renewal time

Print name as it appears on card \_\_\_\_\_ Signature \_\_\_\_\_

Card No. \_\_\_\_\_ Exp. Date \_\_\_\_\_

Mail dues & application to: 4543 Post Oak Place Dr., Suite 200, Houston, Texas 77027-3103, • 713/993-3300. The **HAL-PC Magazine** will be sent to the above address. Your account cannot be credited properly unless this form is filled out completely and legibly.

Referring Member's # \_\_\_\_\_