



Computer Performance Considerations

Written by Gary Bentley, Editor, SouthWest International Personal Computer Club (TX) *Throughput*, April 2009

www.swipcc.org

bentley.gary (at) gmail.com

When I evaluate what might be done to maximize the performance of a computer system, whether that be a system already in use or one I might be specifying for order (i.e., specifying the hardware with a particular level of performance in mind for the intended application) I look at several key factors.

The most critical factor is how much system RAM is available (if you are ordering a new system then you can also order faster RAM and be cognizant of addressing issues). I will state flatly that, all factors being equal, the more RAM available, the faster your computer system will operate. In the same vein, if you want to make full use of that system RAM, get an external graphics card with its own RAM so you don't force your system to share RAM with the video display. If you are specifying a new computer, get the fastest FSB (front side bus) speed you can afford with the microprocessor and then match the RAM bus speed to take advantage of that high bus speed. Don't let a computer maker fool you with a low system price while handing off old slow RAM to you when the motherboard and processor would support faster bus speed RAM. New systems will always use DDR RAM, so that should not be a consideration (and older systems will not be able to use it). Don't be confused by discussions of virtual memory and page files. If you have a large amount of RAM (1 GB or more with Windows XP—3 or 4 GB with Vista, the OS memory hog of all time), your system will rarely need to page out process memory onto the hard drive paging file. You can check that in Task Manager (hit CTRL SHIFT ESC or CTRL ALT DEL or right click the Task Bar and select Task Manager) by looking at the

Performance tab and the Physical Memory Total in conjunction with the Commit Charge. The Physical Memory Total is the amount of RAM you have in your system. The Commit Charge is the total memory allocated to programs and the operating system. If the Commit Charge (Total or Peak) doesn't exceed

the amount of RAM, then the hard drive pagefile is rarely if ever being used and your system should be running at full RAM speed without hard drive performance issues (except when loading the OS and starting an application, etc.). You can also use Performance Monitor (Start, Administrative Tools, Performance) and look at the Memory, Pages Output/Sec parameter. Even if the amount of committed memory exceeds available RAM, if the actual Pages Output/Sec is low or zero most of the time (quoting Microsoft) there is no significant performance problem related to available RAM. I doubt there would be any reason for the typical home user to require a 64 bit computer in order to utilize sufficient RAM.



The second most critical factor is the performance of the hard drive, i.e., the amount of utilization of your hard drive (present or anticipated for the application), the speed at which the drive platters rotate, and the speed of the interface to your hard drive. You never want to reach 50% of capacity of your hard drive. The more data you have on a hard drive the farther the disk drive read/write head has to move inward on the spinning platter to get to the data (on the average). This increases the seek time, the time required for the read/write head to position itself over the desired concentric data track on the spinning disk platter. So, use a hard drive with sufficient storage that you do not exceed 40% or so of the storage capacity (high performance server hard drives often are destroyed or short stroked, i.e., limited to 40% or less so as to keep the data on the outer edge of the platters where it can be quickly

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Lake County Area Computer Enthusiasts LCACE c/o Group Ambassador "J.J." Johnson

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Membership in LCACE is open to all individuals and families interested in personal computing. Annual dues are \$20.00 per individual/family. Associate membership is only \$10.00 (out of state, unable to attend meetings). Membership includes a one year subscription to the *LCACE News Journal* and access to all club libraries and functions. Applications for membership may be obtained at the monthly meeting, by request on the club hotline, and are now available on our web site at - <http://www.lcace.org>.

Meetings

LCACE meetings are usually held on Saturdays at the Grayslake Area Public Library, 100 Library Lane, Grayslake, Illinois. The meeting room opens at noon and the formal meeting begins at 12:30 p.m. All meetings are open to the public. Bring a friend!

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Make Your Cell Phone Battery Last Longer:

If your battery won't hold a charge very well or you don't always have access to a charger, there are a few things you can do to stretch your battery's charge time. When you're not using your phone, turn it off, unless you are expecting an important call. If you are in an area without service, turn your phone off so it isn't searching for signals. If you want to leave your phone on, you can also change a few settings on the phone to save battery. Turn your phone's vibrate feature off and use a basic ringtone on low volume. Also, turn your backlight off, as it will take up excessive battery power. Features like Bluetooth, Internet, cameras, etc. will drain the battery you have left, so try to use these features only when you absolutely need them.

In-Store Recycling:

Electronics that are beyond repair or are no longer compatible with your current components don't serve a purpose around your home, other than taking up space. If you're ready to be rid of these obsolete items, including DVD players, cell phones, and computers, call around to local electronics stores. Often, stores will take in old electronics for recycling. Some stores will charge a small recycling fee for submitting items with screens, such as TVs and CRT monitors, but they'll sometimes supplement that charge with store credit.



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Robin's RAMblings

At our September 12th meeting, LCACE treasurer Winnie Frost won the 50/50 prize. Many thanks to vice president Mike McEnery for leading our gurus. Staples of Mundelein is sending a regional technology specialist to our October 10th meeting.

Upcoming meetings are:

November 7-Social Networking (*Facebook, LinkedIn, Twitter*)-presented by Debby Abbott (co-sponsored by Grayslake Area Public Library)

December 12-Holiday party-State Bank of the Lakes, 50 Commerce Drive, Grayslake; 1-5 pm

January 9, 2010- Show and Tell, and Ask the Gurus

February 13, 2010-Thibby Nguyen-*Smart Computing*

March 13, 2010-TBA

Is there a program you would particularly like? Please email Terri Hanlon at programs@lcace.org or me at president@lcace.org.

The days are getting shorter, and it's time to think about our holiday party. We have GREAT raffle prizes:

1st prize-Toshiba Satellite 17" Notebook with Pentium Dual-Core Processor T3400, 3GB of RAM, 250GB hard drive, webcam and microphone, dual layer DVD±RW/DVD-RAM/DVD±R, and Windows Vista Home Premium-SP1 (eligible for free upgrade to Windows 7)

2nd prize-Acer Aspire One 10.1" Netbook with Intel Atom N270 1.6GHz processor, 1GB of RAM, 160GB hard drive, and Windows XP Home-SP3

3rd prize-Flip Ultra 120 minute digital camcorder with 2" LCD screen

4th prize-One year LCACE membership

Tickets are \$1 each; 6 for \$5, and 25 for \$20. The more tickets you buy, the better your chances of winning one of these fabulous prizes. Winners do not need to be present so plan to sell tickets to out of town family and friends.

Buy tickets for yourself, and plan to pick up tickets to sell at our October meeting. The person who sells the winning first prize ticket and also the person who sells the most tickets will receive a prize at the holiday party.

Please note the new location, date, and time of our holiday party. State Bank of the Lakes is on the southwest corner of Center Street and Commerce Drive in Grayslake. You will find directions and a map on our website (<http://lcace.org/News/StateBankOfTheLakes.htm>). We plan to have a "drive by" at the conclusion of our November 7th meeting to show everyone how to get there. It's just a few minutes away from the Grayslake Area Public Library.

Microsoft introduced a free downloadable anti-virus program, *Microsoft Security Essentials* on September 29th. Microsoft says it will update daily and will not slow down your computer. If you want to try it, go to http://www.microsoft.com/Security_essentials/

October 22nd is the scheduled release date for *Windows 7*, the latest Microsoft operating system. From what I've heard, it's really not a new operating system, but rather *Windows Vista* repaired. Several club members have been using the Beta version for a number of months.

I know many of us are being extremely careful about our spending this year. If you are contemplating tech purchases, you may want to read Dealnews 2009 Black Friday predictions (<http://dealnews.com/features/The-dealnews-2009-Black-Friday-Predictions/317799.html>). Among other things, they predict that "the deals running up to Black Friday (October 31-November 26) and from Cyber Monday to Christmas are likely to be just as good or better, as they were last year. The best advice... is to be choosy about when you buy. When it comes to tech products during the holiday season, there's often a better deal just around the corner."

Happy computing!



Lake County Area Computer Enthusiasts

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HOLIDAY RAFFLE 2009



1st Prize:

Toshiba Satellite 17" Notebook

- Pentium® Dual-Core Processor T3400
- 3GB of RAM
- 250GB hard drive
- Webcam & Microphone
- Dual layer DVD±RW/DVD-RAM/DVD±R
- Windows Vista Home Premium-SP1

2nd Prize:

Acer Aspire One 10.1" Netbook

- Intel Atom N270 1.6GHz
- 1GB of RAM
- 160GB hard drive
- Windows XP Home-SP3.



3rd Prize:

Flip Ultra 120 Minute Digital Camcorder

- 2" LCD color screen
- Convenient flip-out USB arm plugs
- Built-in FlipShare software

4th Prize:

1-Year's Membership LCACE

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Tickets: \$1 each, 6 for \$5, or 25 for \$20

Drawing December 12, 2009

Winner need not be present

Vista

Vista Task Scheduler

Written by Vinny LaBash, Member of the Sarasota Personal Computer Users Group, Inc., Florida

www.spcug.org

vlabash (at) comcast.net

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Windows draws its share of critics, but one thing the wizards of Redmond did right was to redesign the XP Task Scheduler for Vista. There were no radical revisions, simply a combination of small changes that made a big difference. The tool is easy to access, easy to use, easy to modify if necessary, and easy to tell it to go away when you don't need it anymore.

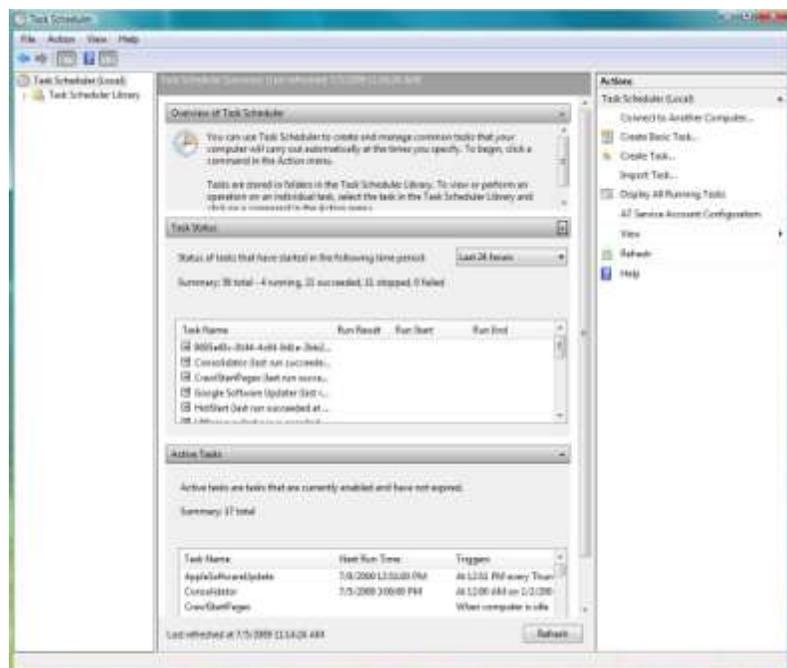
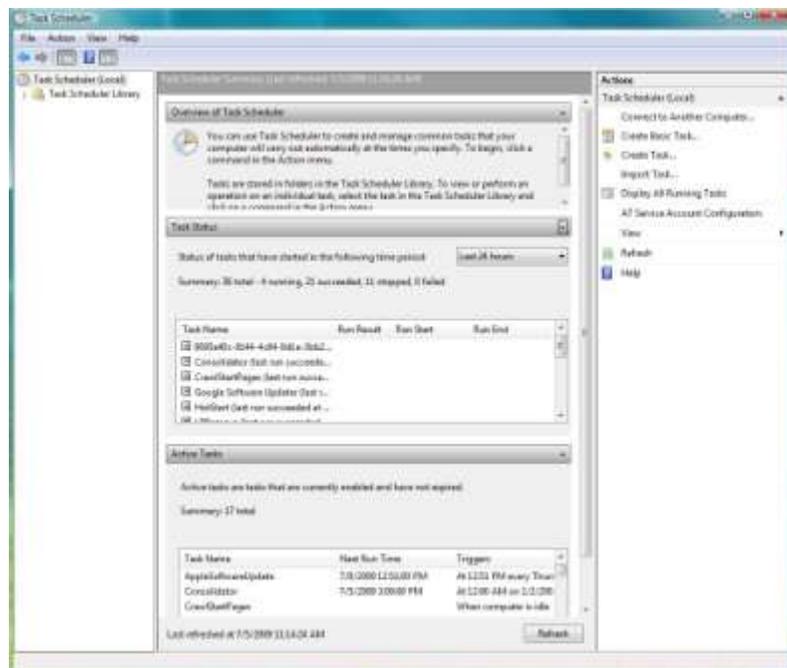
Why would you want to use it? If your computer activity includes doing anything on a regular basis, whether it is daily, weekly, monthly or some other time variant, Task Scheduler could be useful. For example, I need to remember to take medication usually at a time when I'm busy doing something else. Task Scheduler throws a message in my face reminding me to pop my pill at the appropriate time. If I'm not at home, my smart phone relays the message. But at home or elsewhere, it's Vista Task Scheduler that gets the message to me. Of course, when I leave the house I have to remember to bring my medicine with me, but that's a tale for another article.

I'm seriously thinking of creating a computer game for senior citizens called "The Hereafter". It starts out with the player walking into a room and wondering "What am I here after?" Task Scheduler will play a big part in this.

Let's say you use the calculator a lot and you would like it to start up whenever you turn on your computer. Here's how to set it up:

1. Click on the **Start Orb**.
2. Click on **Control Panel**.
3. Click on **System and Maintenance**
4. In the **Administrative Tools** section, click on **Schedule tasks**. (You may have to scroll down).

5. At some point you may be asked to supply an Administrative Password. Provide it and continue.



You will now see a dialog box with a very intimidating appearance. It doesn't bite and won't tell anyone if you stayed up past your bed time.

Let's examine it briefly to understand what's going on in the dialog box before we proceed. In the left pane, the top item which is marked (local) tells us that what we see in the middle pane are Task Scheduler items assigned to the machine you are currently using.

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reached). Once the read/write head reaches a track then the rotational speed of the platter comes into play, introducing latency, the time required for the desired sector of the track to rotate into position beneath the head. How do you reduce latency? Get a hard drive that spins as fast as you can afford. Most desktop hard drives now spin at 7200 RPM (don't let them slip you a 5400 RPM drive on your desktop or your laptop!). If your drive has a slower RPM, you can increase performance by purchasing a 7200 RPM drive. Note that high performance server drives spin at 10,000 and 15,000 RPM, but those drives are expensive. If you are evaluating a replacement drive (or specifying the hard drive in a new system), look at the access time parameter for the drive. This will generally be around 11 milliseconds for 7200 RPM desktop PC ATA/SATA drives. The access time will include seek time and rotational latency. As for the type of interface, ATA drives (which peaked at around 133 MB/sec interface performance, setting aside internal data rate of around 60 MB/s and PCI bus rate considerations) are no longer offered, so you will see SATA (serial ATA) drives in a new computer. I wouldn't bother attempting to replace an ATA drive in an old PC with a SATA drive. You would need a SATA controller card as well as SATA drive and you might as well just purchase a new computer. The current SATA interface rate is 3 Gbps (the initial SATA interface was 1.5 Gbps), i.e., 3 gigabits per second. That translates to approximately 300 MB/sec. However, the actual rate that the read head can read the data off the spinning platter of the drive is closer to 100 MB/sec (the internal data rate). You therefore can benefit by having a drive with a large cache memory, where a large amount of data has been read internally by the hard drive before the interface is accessed, at which time the interface can burst perform at the full interface speed of 3 Gbps/300 MB/sec. I note that even the expensive server grade SCSI and SAS drives have about that same external interface transfer rate, i.e., 300 – 320 MB/sec, so their increased performance is coming directly from the high rotational speeds (10 – 15 K) and fast seeks, giving access times of 3 – 5 ms vs. 11 ms or so for desktop SATA drives. Defragmenting your drive regularly will help keep the drive operating at peak efficiency.

A less critical factor is the speed of the microprocessor itself (FSB considerations aside as they relate to RAM access speed). A faster microprocessor or a dual or quad core processor will allow applications, their processes and threads to execute faster (to actually run the microprocessor instructions of which a program is com-

posed) once the instructions and data reach the microprocessor.

So, if you have processing intensive applications like video or music (studio) production and editing (or scientific number crunching), faster and more core processors will speed things up considerably, but only if you have plenty of RAM and a high performance hard drive.

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Mr. Bentley studied electrical engineering at the University of Texas, began working in the electronics industry in 1978 with GTE Network Systems (Lenkurt), then software engineering with various startups in the 1980's, designing and implementing, among other things, pre-Internet email communications systems multitasking on Intel platforms and MSDOS PC's. 1984 - 1986.

Gary now provides Information Technology consulting services in the El Paso, Texas and Las Cruces, New Mexico areas. Gary has edited and contributed articles to the award-winning Southwest International Personal Computer Club monthly magazine, "Throughput", since December, 2003.

XP Shortcut Keys



F1 - Universal Help key - Works in all Microsoft based programs

F2 - Rename files or Folders

F3 - Opens up the Find dialogue

F5 - Refresh contents in current application

Winkey D - This will minimize all windows you have open and take you to the desktop. by pressing it again this can be reversed

Winkey E - This will open up the Windows Explorer file browser window

Winkey TAB - This will cycle through open programs through the taskbar.

Winkey F - This will open up the windows search feature

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If your machine is not part of a network it has no other significance. The middle pane is divided into three parts:

Overview of Task Scheduler: Overview is a brief description of what you can do with the tool and where the tasks are stored. The folder labeled **Task Scheduler Library** can be expanded to display the Console Tree. Ignore this for now.

Task Status: This section covers four time periods. Tasks that have run in the last hour, 24 hours, 7 days or 30 days. It tells you how many tasks have started during the period, how many are currently running, how many are complete, how many are stopped for one reason or another, and how many have failed. Obviously, this section is used for troubleshooting.

Active Tasks: This section tells you what Task Scheduler is doing right now. Let's leave it at that.

The right pane is the section we came to play in. For our purposes there is no important difference between **Create Basic Task** and **Create Task**.

1. Click on **Create Basic Task**.
2. The **Create Basic Task Wizard** opens.
3. Type the name of your task. You could try something original like Start Calculator. Create a description if you want. Then click the **Next** button at the bottom left of the dialog box.
4. Tell the Wizard when you want the task to start. You have several choices. For this exercise choose **Daily**. Again, click on the **Next** button when you're done.
5. Tell the Wizard what day you want the calculator to make its first automated appearance on your desktop.
6. Now tell it what time of the day to start. Be careful you don't choose a time when you're sleeping. Click **Next**.
7. The **Action** box makes its appearance. You aren't sending an email; neither do you want to display a message. **Start a program** is the correct choice. Click **Next**.
8. Type calc.exe in the **Action** text box. Click **Next**.
9. Check the **Summary** dialog box to make sure that everything is the way you want it.
10. Click **Finish**, and you're done.

There are two important concepts at work when you run tasks using the Task Scheduler. The first is the trig-

ger, the event that causes a task to run. The second is the action, the work that is carried out when the task is triggered.

There are three main actions associated with running a task: sending an e-mail, running a program, and displaying a message. Many actions can trigger a task. Among the most common actions are starting the computer, the computer entering an idle state, the occurrence of a specific time and date or the computer performing some specific function. Think about how you use your computer and you can probably find a productive use for the Task Scheduler.

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Winkey CTRL F - This will open up the search for **computers window**.

Winkey F1 - This will open up the Microsoft Help and Support Centre

Winkey R - This will bring up the run box dialogue

Winkey L - This will lock the computer and take you to the sign in screen

Editing

ALT F - Opens up the file menu

ALT E - Opens up the edit menu

Ctrl A - Highlights all text

Ctrl C - Copies highlighted selected text

Ctrl X - Cuts highlighted selected text

Ctrl V - Pastes text from clipboard into document

Ctrl Z - Reverses last action

Ctrl P - Brings up the print dialogue

Ctrl B - Bold Text

Ctrl I - Place text in italics

Ctrl U - Underline text

Insert - Toggles between overtype mode and normal mode

Ctrl Insert - Copies selected text

Shift Delete - Cuts highlighted selected text

Shift Insert - Pastes text from clipboard into document

Shift Home - Selects the text from current cursor position to beginning of line

Shift End - Selects the text from current cursor position to end of line

Ctrl Left Arrow - Move the cursor backward one word

Ctrl Right Arrow - Move the cursor forward one word

Home Key - Goes to beginning of current line

End Key - Goes to end of current line

Ctrl Home - Goes to top of document

Ctrl End - Goes to end of document

Members' E-mail Addresses



Alleman, Elizabeth***** esa2204@aol.com
 Anderson, Jean M***** jande77893@aol.com
 Barnett, Fred***** BNSCom@aol.com
 Berg-Wells, Lois J***** luludefl@yahoo.com
 Berry, Bob***** mqd2race@yahoo.com
 Berry, Tracy A***** tberry64@aol.com
 Bitterman, Jay***** bittiyaj@aol.com
 Busch, Linda***** lindashrub@juno.com
 DAgostino, Robert***** rusirius2735@sbcglobal.net
 Ditman, Bill***** William.ditman@comcast.net
 Dunn, Kevin A***** kevindunn45@hotmail.com
 Florian, Sherry***** florian3@earthlink.net
 Frost, Jack***** Jfrost13@sbcglobal.net
 Frost, Winnie***** wfrost13@sbcglobal.net
 Gauger, Tammy L***** tammylynngauger@juno.com
 Gothann, Edward***** ecgothann@earthlink.net
 Guthman, Carolyn A***** carolyng5@aol.com
 Halley, Jack W***** jack96@aol.com
 Hamilton, Bill***** hamiltonbill24@comcast.net
 Hanlon, Terri***** terrihanlon@comcast.net
 Henriksen, Henry***** hhenriksen@wi.rr.com
 Hobson, Marshia***** omsgadget@yahoo.com
 Jacobs, Bobby***** boj2361@gmail.com
 Johnson, Dwight R***** jj1450xl@yahoo.com
 Kalinoski, Donna L***** donnaalek@juno.com
 Kline, Cherie***** catmom1001@aol.com
 Koudelka, Linda & Robert***** koudelka3@comcast.net
 Kostelnik, Steve***** steve_kostelnik@usa.net
 Lagoni, Doreen J***** bearmagic1999@aol.com
 Larkin, Lester***** LesLarkin@aim.com
 Leider, William***** willeider1@hotmail.com
 MacTavish, Angus***** anguslechat@aol.com
 Martin, Donald L***** dmartin339@comcast.net
 McDonald, Kathleen***** clbavp@aol.com
 McDonald, Mark J***** markym36@aol.com
 Nielson, R***** r.nielson@sbcglobal.net
 Nordstrom, Lee & Mary***** LeeNord@mw.sisna.net
 Ortseifen, Patricia***** patricia@ortseifen.com
 Rivera, Julio & Lourdes*** jlriviera@db3broadband.com
 Rutledge, James W***** jrutnet@aol.com
 Salsburg, Leslie D***** leslie164@juno.com
 Schintgen, Paul***** patys@theramp.net
 Seidenberg, Lew***** drlw1@aol.com
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 Smatlak, Ellen M***** emsmis@hotmail.com
 Spitzen, Chris L***** kirls@aol.com
 Straw, Gerald***** gkstraw@comcast.net
 Sutherland, Dorothy***** deedee1938@yahoo.com
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TIME TO RENEW

All memberships are now renewable annually on April 1st. This change in the payment of annual dues will allow the treasurer to budget our money more closely. If you have not already renewed your membership, please see Sherry Florian or Winnie Frost.

Serving Lake County, Illinois



NEXT MEETING
October 10, 2009
Grayslake Area Public Library
at 12:30 p.m.

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November 7, 2009

Social Networking (*Facebook, Twitter, etc.*)
by Debby Abbott.

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