Web Based Calendars for Education
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Life never seems to slow down. At school, in after school activities, or at home, it is never easy to keep track of everyone's schedule and make sure no one misses an event or makes an appointment that conflicts with something else. In our modern information age, isn't technology supposed to make our lives easier, not more complicated? In the case of web based calendar technology, the answer can be a resounding "YES!"

Computerized calendar programs have been around for a number of years, but widespread access to the internet has significantly increased the potential benefits and ease of use of these applications. Unlike a typical calendar program, accessible only on one computer (and possibly "synced" with a portable digital assistant, or PDA, like a Palm Pilot), a web based calendar is accessible from any computer connected to the same network. The calendar is viewed and edited directly through a web browser, so any computer (Macintosh or Windows) running Netscape or Internet Explorer can access the calendar. If the web based calendar is running on a school intranet, any computer on campus can view and/or edit the calendar's contents. Security features can be enabled to grant only authenticated users the ability to add, edit, or delete entries. If the calendar runs on a computer connected to the internet, any computer with internet access (anywhere in the world) can access it. Web based calendars are powerful tools.

This article describes the steps required to set up two different types of web based calendars: a locally running calendar program (called "iCal," shareware) and a free, internet accessible calendar program (Yahoo Calendar.) These techniques can be used to create an easily updateable, web based calendar for a single classroom, a computer lab, a campus, or an entire school district. A linked copy of this article is available on http://www.wtvi.com/teks.

Why use a web based calendar?

Until computer technology becomes as essential a part of a teacher's daily routine as the chalkboard or the overhead projector, true "technology integration into the curriculum" will remain a distant goal. As schools

continue to build the highway of telecommunications access to the internet and purchase hardware and software tools for their classrooms, the challenge of "how to get our teachers to use this stuff" is ever present. Deploying a campus-wide calendar program is a useful step administrators can take to help make the "tools of technology" an essential part of every teacher's daily routine. It can also help build the foundational literacy skills required for more complex instructional technology projects. Many teachers still have a great deal of fear and uncertainty about using the computer. Using it to view and update school or classroom events on a web based calendar can be a relatively non-threatening way to help teachers overcome their fear of computer use and experience the time-saving potential of technology.

Other reasons to utilize a web based calendar include its cross platform compatibility and its network-wide accessibility. Many school districts in the United States continue to have mixed platform environments: both Macintosh and Windows computers reside on local and wide area networks. The computer industry is fluid and changeable: while Microsoft Windows is used by approximately 90% of users today, there is no guarantee that its dominance will continue uninterrupted in the future. For these reasons, it makes sense to adopt technology standards that are supported by different types of platforms and adhere to the open standards of webpages (written in HTML). Web based calendars offer unsurpassed ease of access and the expectation of future computer compatibility in the unpredictable future.

Schools with direct access to the internet via ethernet cabling already have the infrastructure required to start using web based calendars. Here's how to get started.

A Simple Intranet Calendar

In contrast to the INTERnet, which includes resources accessable from anywhere in the world (with a telecommunications link), your school or district INTRAnet houses resources that are only available locally. Depending on how your network is configured, shared resources on your network may be accessible throughout a single building or throughout the entire district. Resources restricted to local-only access are advantageous in several ways:

- Announcements and appointments appropriate for internal-use only can be posted.

- The risk of hackers breaking into and messing up your network resources is reduced.
- Photos and other documents not appropriate for website publication, perhaps because they include student first and last names, can be made available.

There are a variety of commercial web based calendar software products (like Netscape calendar), but many are cost prohibitive or just too complicated for anyone other than an IS professional to figure out. Microsoft Outlook includes some powerful calendaring features, but can be tricky to master and may not meet the needs of your entire organization, whether it is a district, campus, or single grade level.

An effective and affordable calendar software solution is Brown Bear Software's web based calendar server, "iCal." (http://www.brownbearsw.com) iCal is straightforward and relatively inexpensive at $55 for a single calendar and $395 for unlimited calendars.

iCal will run on any Windows computer, but as with other server applications, the faster your processor and the more memory the computer has, the better. (Remember that even though it runs on a Windows computer, Macintoshes on your network will also be able to access it, because it is web based.) The amount of memory your Windows computer needs to run iCal will depend on the amount of "hits" (simultaneous requests for calendar data) that your computer will receive. iCal runs without any problems on a 233 mHz machine with 32 MB of memory. A minimum system configuration is not provided by iCal's creators, so just remember that "faster and more memory" is better, and try it with the resources you have available.

Because the computer running iCal will act as a "server" for other computers on your network, it should stay on all the time and probably not be used for other computing tasks. This is not an absolute requirement, but using other applications while iCal is running increases the chances of a system freeze or other error that will require a restart. The safest option is to run iCal on a computer that will not be used by students or teachers, and will be wholly dedicated to running the iCal server software.

There is one item your Windows computer must possess to run the iCal program that it probably does not have already: a static IP address. Most network administrators configure client computers to dynamically obtain an IP address (like an ID number) at the time they try to connect to the internet. This method, called DHCP (Dynamic Host Configuration Protocol),

makes network management easier, since administrators do not have to keep track of separate IP addresses for each computer on the network. If more than one computer tries to connect to the internet with the same IP address, an error results and access is blocked.

Before installing iCal, check to see if your computer already has a static (unchanging) IP address or if you will have to request one from your network administrator. To do this on a Windows machine:

1. Right click the Network Neighborhood and choose Properties.
2. Locate the line in the window that includes the words "TCP/IP" and the name of your ethernet card. Double click it.
3. Click the tab "IP Address" if it is not already selected by default.
4. If "Specify an IP Address" is selected, write down the IP address of your computer. You do not have to write down the second number, the "subnet mask."
5. If "Obtain an IP Address Automatically" is selected, you need to ask your network administrator to assign your computer a static IP address. Either get an IS technician to come configure your computer with this static IP address, or find out all the settings required for static IP internet access on your network (subnet mask, gateway address, router address, etc.)

Once your computer is configured with a static IP address and you know what it is, you're ready to download and install iCal.

Unlike other web based calendar programs, which require you to already have (or obtain) server software, iCal comes with its own server software. After you download iCal (http://www.brownbearsw.com/ical/icaldl.htm), double click the file icon to install it on any Windows95, Windows98, or Windows NT computer. Once it is installed, run the program and your calendar "server" will go online. The downloadable demo version of iCal is fully functional and non-expiring, but it will only let you create one calendar. If you use it beyond the 30 day evaluation period, you should either register it for single calendar use ($55) or for unlimited calendar use ($395). You can register the program by mail or online.

An additional licensing option is available ($495) that includes email notification support for scheduled events. Unless you are already a network administrator, this option is probably more complicated than it is worth.

Configuring iCal for Intranet Use

One of the first things you need to do once iCal is installed is specify your computer's IP address within the program and enter your registration code (if you've already registered). When iCal is launched, a program tutorial will automatically be displayed within your default web browser. On the task bar, switch into the actual iCal program to make some configuration changes.

The three tabs within iCal are "Status," "Listener," and "About." Click the "Status" tab and click the "Idle Server" button. This is required to make changes to the program's IP address and registration information.

Next, click the "Listener" tab. In the top field, enter the IP address of your computer. If you already have web server software installed on your computer (if the computer is running Windows NT server, for example), you will also have to enter a port number. The default setting is "80," and the iCal documentation suggests changing it to "8085" if needed. Most users will not have to enter anything in the port field. After you are familiar with the program and have read the tutorial, you may want to check the "Start Minimized" box and uncheck the "Autostart Browser" and "Show Tutorial" boxes.

To enter a registration code, click the "About" tab. Enter the registration name and number exactly as they were provided to you. When finished, click back on the "Status" tab and click "Start Server." You can click the "x" in the upper right corner of the iCal window, and it will run as a minimized application in the system tray (on the right side of the task bar).

Your iCal server is now accessible from any computer on your local area network (LAN). The remainder of these configuration steps can be completed on the server computer or any other "client" computer on the LAN.



Figure 1: Unregistered iCal display

To access the calendar and specify preference settings, including access security passwords, launch a web browser. Type "http://" and the IP address of the computer running iCal, followed by a colon, the port number, a forward slash, and the word "default." For example, you might type "**http://10.1.0.1:80/default**". A window similar to Figure 1 (at right) will be displayed. The unregistered version of iCal includes the phrase "iCal demonstration calendar" and a link to Brown Bear software below the month and year at the top of each screen. These words and links are removed once the software registration code is entered on the server.

To specify security access settings, scroll down to the bottom of the screen and click "Administer This Calendar" in the lower right corner. On the next screen, click "Security." You can choose to specify different user IDs and passwords for people authorized to:

- change calendar settings
- edit and delete entries
- add entries
- view the calendar.

Most users will want to allow "anyone" to view the calendar. However, if a professional iCal license for unlimited calendars is purchased, limited-access calendars can be separately created which require a password to view. An example might be the principal's calendar, which could include scheduled ARDs and other confidential information. By requiring a password to view the administrator's calendar, only the principal and his/her secretary can have access to it.

Whether everyone is allowed to add events to the calendar is dependent upon how users will initially link to the calendar, and how users choose to

administer it. If the link is on a school intranet webpage, which students also access, it is a good idea to password enable the capability to change calendar settings, edit/delete entries, and add entries. If teachers will access the calendar from their own computer (which students do NOT use) by initially typing the address into their browser and then saving it as a favorite/bookmark, then it is probably OK to let anyone add calendar entries. If this setup does not work, security settings can always be changed in the future and a user ID/password added.

Administrators of campus iCal calendars may choose to set up a private password for changing calendar settings, and another password for editing/deleting and adding calendar entries. This second password can be shared with other teachers, secretaries, and administrators who need to make changes and additions to the calendar.

A variety of other preference settings can be specified, including text to include in the header / footer sections of the calendar. A basic understanding of HTML will allow users to include images and links to other internet webpages as well. A return link to the campus intranet homepage is useful in the footer section. If unsure about HTML syntax, type the text, image reference, or link into a webpage editor like Netscape Composer. Then, when viewing the source code (HTML code), copy it to the clipboard (EDIT - COPY) so you can paste it into the header or footer section of iCal.

Add Events within iCal

Adding an event to the iCal calendar is straightforward. Find the date of the event to schedule and click on its underlined number. If the date is not in the displayed month, select the month from the navigational menu at the top of the screen, and then click on the desired date.

If security settings have been specified, clicking on a date on the calendar will bring up a security logon screen, asking for the correct user ID and password. If these are not entered correctly, access to the calendar's editing features will be denied. If the computer is not exclusively used by teachers, secretaries, or administrators, the box next to "remember password" should NOT be checked. Otherwise, students or others who use the computer later could gain access to the calendar to add or edit/delete events.

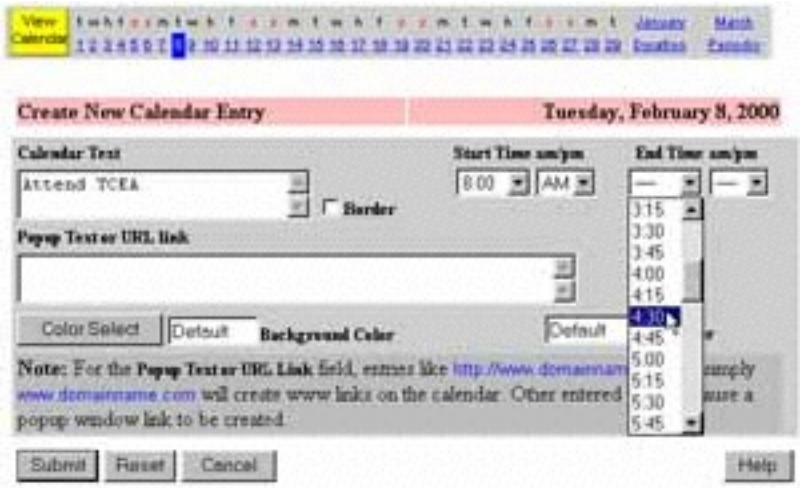


Figure 2: iCal entry screen for a new event

If the user id and password are entered correctly, a new event entry screen will be displayed (see Figure 2). Enter the text to be displayed on the calendar in the field under "Calendar Text." If desired, select the start and end time of the event from the popup menu. These are optional: a start time can be selected without an ending time, or no time can be specified. If more information about the event should be provided to visitors, type it in the box under "Popup Text." If text is entered in this space, the event will appear on the calendar as a link. Clicking on the link will bring up a small window including the text typed in this second field. Email addresses and internet websites will automatically be made into working HTML links.

If desired, click on the "Color Select" window to choose a background and text color for the event. When selecting colors, remember that older web browsers (like Netscape 2.0) cannot display background colors of a HTML table. This means that if users on your network view the calendar with Netscape 2.0 and an event is displayed as white text on a dark blue background, the user will likely not see the event. The dark blue background will not be displayed in the browser, and the white text on a white background will not be visible. To be safe, choose dark text colors on light backgrounds. Different organizations or event categories can be assigned different colors: green for PTA events, red for technology training opportunities, etc.

After all desired settings are made, click the "Submit" button and then the yellow "View Calendar" button to see the event as visitors will see it in the calendar. To edit an event previously entered, click on the event's date. Click on the event's link and make the change, then click "Submit" as

before. To delete an event, after clicking on the event's date, click on the scissors graphic (to "cut" the entry).



Figure 3: iCal Periodic Event Options

If an event repeats regularly, choose to add a "periodic" event by clicking "Add Periodic Event" in the lower left corner of a calendar window. Choose whether the event repeats by day or day of the week, and how often. If an event takes place on more than one day, choose to add a "duration" event. The same options for a normal event are available, except the ending date must be specified. Users can optionally choose to exclude weekends, which is helpful for many school projects.

To see iCal in action, visit http://24.237.4.217:8080/default. This site, maintained by Brown Bear Software, is a fully functional, running version of iCal. User IDs and passwords are NOT required to add events or change other calendar settings, so visitors can try out the different techniques described above on any internet connected computer.

Advanced Features

iCal includes too many features to thoroughly detail here, but two worth noting are the ability to publish static HTML versions of the calendar and the "include calendars" option. If the IP address of the computer running iCal is not local (it is accessible from any computer on the internet, both within and outside your school network), then parents and other community members can view the calendar as soon as a link to it is provided on your school website. If the IP address of the iCal computer is local (more likely), then the calendar information is not immediately available outside the campus LAN or district WAN.

To make the calendar information available on the internet, choose "Administer this Calendar" in the lower right corner of any iCal browser window. Then choose "Publish Calendar." Specify the starting and ending month/year, and click "Create." HTML files will be created on your server

computer in the iCal folder, in a new folder named for the calendar being published (default). Upload this folder from your iCal server computer to the school website directory on the internet with FTP software, and make a link to the first page (named curblockmonth.html) on your homepage. Now the school calendar is published online! To keep it up to date, repeat this publication process using iCal every week or so, as desired. An example of "static" published iCal monthly calendars is online athttp://www.lubbock.k12.tx.us/rush/events/curblockmonth.html.

The option to "include calendars" can save time if you purchase an iCal license to create multiple calendars. Choose it from the administration options to dynamically include data from other calendars in another one. Instead of entering the school holidays on a main events calendar and the administrator's calendar, create a "district events" calendar and choose to include it in both of the other calendars. If the district's calendar changes, the "district events" calendar can be updated one time. These changes will be dynamically reflected in both the main events calendar and the administrator's calendar.

If your campus or district does not already have an intranet homepage, iCal can host one or more in addition to calendar resources. Create a webpage in Netscape Composer (free) or another webpage editing program, and save it inside the iCal folder. It can be directly accessed from any computer on your LAN as long as iCal is running, by entering the IP address and port number of your computer's iCal program, a forward slash, and the name of the webpage document. Example: http://10.1.0.1:80/intranethome.html.

While the present version of iCal (3.0) does not include the ability to sync with a PDA like a Palm Pilot, this feature is planned for future releases. iCal is wonderfully easy to install, set up, and use. When it comes to server software on Windows computers, there are few programs eligible for such praise. If your campus or district is looking for an affordable and user-friendly web based calendar program, iCal deserves close examination.

Another web calendar program worth considering is WebEvent (http://www.webevent.com). An impressive number of organizations use WebEvent, including The Kinkaid School in Houston, Texas (http://www.kinkaid.org). Minicalendar is a $10 shareware calendar for Macintosh which includes some web publication features.

Yahoo Calendar: Accessible from Anywhere

If the previous discussion of setting up a static IP address and a calendar "server" computer turned you off, then Yahoo's free calendar service may be a better alternative. The major differences between Yahoo's calendar and the iCal program are:

1. A Yahoo calendar is an individual calendar. It cannot be updated by an unlimited number of users: just you.
2. You do not have to install any software or set aside a computer to be a "calendar server" to use a web based Yahoo calendar.
3. The web address of your Yahoo calendar can be shared with others, so students and parents can view it on the internet from home. Teachers do not need to possess web publishing knowledge or skills, such as how to use FTP software to upload webpages to a server.

To set up a Yahoo calendar, visit http://calendar.yahoo.com. If you do not already have a free Yahoo email account, you will be asked to sign up as a new user. If you do have a Yahoo email account, you will be asked to log in.

Once logged in, a daily calendar for the current date will be displayed, with blank entries from 8:00 am to 5:00 pm. A small, clickable, monthly calendar will also be displayed on the left side of the screen. Like iCal, to add an event, click on the day of the event. Then click the "Add Event" button in the upper right corner of the day's calendar.

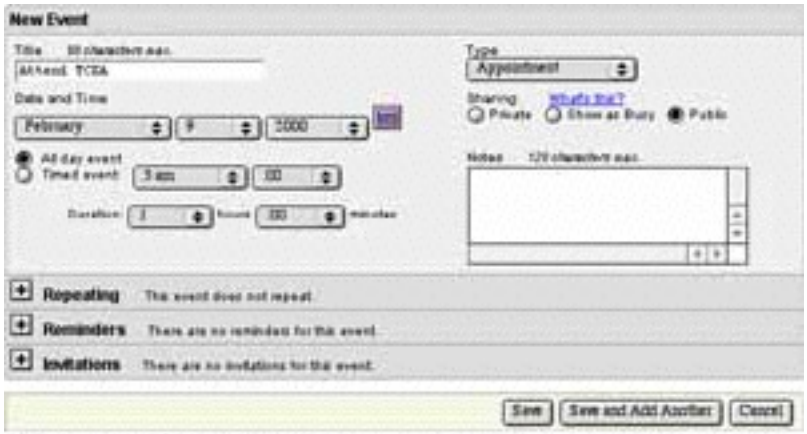


Figure 4: "Add Event" in Yahoo Calendar

After clicking "Add Event," a screen similar to iCal's is presented. Options are included for repeating events, as well as to invite others and send reminders (See Figure 4).

The option to invite others will create and send email messages to recipients who should also attend the scheduled event. If entries are already set up in the Yahoo Address book, names and email addresses can be inserted from there.

The option to send reminders is particularly helpful. Choices include having an email reminder sent to your account on a certain date and time, a message sent to a Yahoo instant messenger address, or emailed to a pager or cell phone. If you choose all those reminder methods and still miss the appointment, you're really in trouble!

The option under "Sharing" to make the appointment "Public" will make the scheduled event visible to others on the internet. When calendar "Sharing" is enabled for your Yahoo user account, you can specify access privileges. You can choose to either make the "pubic" events on your calendar accessible to anyone on the internet, or only to individuals on a list you specify. If you are planning to share "public" events with students and parents, the first choice will probably be the easiest to manage.

For others to view your Yahoo calendar, they will enter the web address http://calendar.yahoo.com/public/yourusername into their browser, where the last word "yourusername" is your Yahoo ID.

Yahoo web based calendaring is free, fairly simple, and globally accessible. It also permits free syncing with a PDA, like a Palm Pilot organizer. While it may not meet group calendaring needs as well as iCal, it is easy to set up and the price is right.

Toward A Web Based Future?

"So much to do, so little time." Fortunately or unfortunately, technology cannot extend our work day, but it can help us stay organized and on time. Adopting a web based calendar program like iCal or Yahoo Calendar at school makes sense for many reasons. Beyond the obvious benefit of keeping everyone informed of upcoming events, the use of web based calendars at school can encourage teachers to overcome residual fears of computer use and increase their overall computer literacy. By helping teachers use their computer as an essential tool in their daily routines, web based calendars can promote the process of technology integration in the classroom that, in the end, can result in enhanced student learning.

Wesley Fryer is a technology facilitator and Windows computer lab teacher in the Lubbock Independent School District (Texas). He invites your questions and comments about this article and other educational technology issues.

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