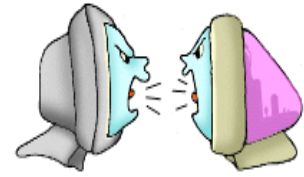




Chapter 2

Nothing But Net: Get Connected!



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Schools created their networks over the past decade, but now many are struggling with the increased demands on their systems. The use (some say overuse) of e-mail, the use of file sharing and networked comment reporting, increased use of the web for educational purposes, and the onslaught of video on the web--all have contributed to the network concerns of schools. Networking issues might become an ongoing dilemma for technology directors; how can schools address the increased need for bandwidth?

So what is bandwidth? In computer networks, bandwidth is the data transfer rate, usually expressed in bits per second. When a web site takes forever to download or a YouTube video appears choppy, the problem lies with the bandwidth of the connection between your computer and the Internet Service Provider. The bandwidth issue is, actually, the last mile of the connection, so to speak; consider driving on highway, happily cruising along at 70 miles per hour, when suddenly you have to merge from four lanes to one. Congestion and headaches ensue. That is the bandwidth issue schools are now facing.

A Short History of the Net

permission requested from info.isoc.org/guest/zakon/Internet/History/HIT.html
for an e-mail copy, send a blank message to timeline@hobbes.mitre.org

- 1969 ARPANET commissioned by Department of Defense for research into networking
- 1979 USENET established using UUCP between Duke and UNC
- 1981 BITNET started as a cooperative network at the City University of New York with the first connection to Yale; BITNET stood for Because It's Time Network
- 1981 Minitel (Teletel) is deployed across France by France Telecom
- 1983 Berkeley releases software incorporating TCP/IP
- 1984 Domain Name System (DNS) introduced; number of hosts (sites) breaks 1000
- 1986 Network News Transfer Protocol (NNTP) designed/enhances Usenet performance over TCP/IP; number of hosts breaks 10,000
- 1988 NSFNET backbone upgraded to T1 (1.544Mbps)
- 1989 Number of hosts breaks 100,000
- 1991 Gopher released at the Univ of Minnesota
- 1991 World Wide Web released by CERN
- 1992 Number of hosts (now called Web sites) breaks 1,000,000
The term "Surfing the Internet" is coined by Jean Armour Polly
- 1993 InterNIC created by NSF to provide specific Internet services (e.g. names)
Mosaic takes the Internet by storm
- 1995 Popular dial-up systems (CompuServe, AOL, Prodigy) begin to provide Web access
- 1997 71,618 mailing lists registered at Liszt, a mailing list directory
- 1998 Number of hosts (now called Web sites) breaks 29,000,000
- 1999 www.teachingcompany.com and www.summercore.com
- 2000 Airport Technology and wireless networks
- 2001 Google indexes 1,346,966,000 Web pages
- 2002 Google indexes 2,073,418,204 Web pages
- 2003 Google indexes 3,083,324,652 Web pages
- 2004 Wireless technology hits big time
- 2005 Dial-up modems go the way of dial phones
- 2006 Web 2.0 is the way to go
- 2007 The Read/Write Web takes over
- 2008 The YouTube Generation
- 2009 Twitter Nation

Listservs and Newsgroups

A Listserv is an electronic magazine that comes to your individual e-mail box and tends to resemble the “Letters to the Editor” section of a magazine. A Newsgroup is a public conference bulletin board. In contrast to a Listserv which goes to individual e-mailboxes, a Newsgroup generally shows up as a conference on a bulletin board. To look for a list, send e-mail to listserv@listserv.net (subject blank) with the phrase List Global Red Sox using your own topic of course. You will get informative e-mail back (perhaps within 33 seconds) that gives you listserv choices on that topic. Or you can search for LISTSERV lists via the Web www.lsoft.com/lists/listref.html; once you find a desired listserv, it is time to subscribe!

To subscribe, send e-mail to **LISTSERV@LISTSERV.NET**, leave the subject blank and type **SUBSCRIBE listname** with the list you want to join, e.g. **SUBSCRIBE BOSOX**

The Wizards ListServ at thayer.org

Mark Nelson (mnelson@thayer.org), Director of Information Technology at Thayer Academy in Braintree, MA runs a wonderful listserv for computer coordinators and computer teachers. To subscribe, you send a note to **autoshare@thayer.org** in which you write in the body of the note **subscribe wizards-l your name**. Once you are subscribed, you can also send **review wizards-l** as a command to **autoshare@thayer.org** to see who is on the list. Mark asks that you introduce yourself to the relatively small group with a short note about your position and your school. Send your notes to **wizards-l@thayer.org** to write a note to the group!

ISED-L: Independent School Educators On Line

This wonderful listserv for independent school educators, founded by Ellen Berne of Winsor School in 1994, is equally valuable to tech people and administrators. To subscribe, send to **listserv@listserv.syr.edu**, leaving the subject blank. In the body of the message, type **SUBSCRIBE ISED-L Larry Bird**, using your name of course.

- To send a note to your ISED colleagues, send your note to **ISED-L@listserv.syr.edu** and you will get confirmation within a few minutes. Ed Siegfried formerly from Milton Academy and Marti Weston from Georgetown Day School run ISED-L and estimate that there are usually 600-700 copies and perhaps 2000 readers of any given posting.

NYCIST ListServ

A fantastic tech listserv (<http://www.nycist.net>) of some of the “niceist” tech people around -- New York City Independent School Technologists. To subscribe to the list send mail to **forum-subscribe@nycist.net** from the address you wish subscribed to the list. To unsubscribe from the list send mail to **forum-unsubscribe@nycist.net** from the address you wish to unsubscribe from the list. To get additional help send mail to **forum-help@nycist.net**, or, if you need a human to look at it, **forum-owner@nycist.net**.

File extensions

Quiz? Identify the software for each Red Sox file from game 7 against the Yankees on 10/20/04 when the curse was reversed:

- varitek.doc ___
- millar.txt ___
- bellhorn.wks ___
- cabrera.mpg ___
- mueller.ppt ___
- ramirez.isf ___
- damon.xls ___
- nixon.cwk ___
- ortiz.pdf ___
- lowe.jpg ___

Sending files via e-mail

- 1) if it is text, always copy and paste into the e-mail (and ask the e-mail sender to do the same); yes, you may lose some formatting, but attached files can be very problematic.
- 2) It might be necessary to add the 3 letter extension of .DOC or .XLS or .JPG onto the filename so a PC user can read the file.
- 3) if the file does not easily open or does not work via double-click, then open the application first (back door) and then navigate to the location and open the file from within the application or drag the file onto the application's icon on the dock, taskbar, or desktop shortcut.

Mac users usually had no idea that files have built-in tags indicating the file type, while PC users see these tags regularly. Metaphorically, this 3 letter code is like the tag on a piece of clothing at a store or like a bar code. With the advent of OS X, Mac users now frequently deal with file extensions.

common: .doc (MS Word) .rtf (rich text format) .txt (text)
.xls (excel) .pages (iWorks) .psd (photoshop)
.pdf (adobe acrobat) .ppt (powerpoint) .isf (inspiration) .gsp (sketchpad)

audio: mp3 (music) .wav (PC) .aif (quality audio) .mid (midi)
.rm (real player files) .ra (real audio) .aac (iTunes)

PC-specific: .exe (executable) .drv (drivers) .bat (batch files)

Transfers: .hqx (binhex/stuffit) .zip (pc compressed file)
.bin (mac-binary).sit (stuffed file) .dmg (Mac OSX disc image)

graphics/video: .jpg .gif .pict (mac) .bmp (pc, usually created with Paint)
.png (portable network graphic) .qt (quicktime) .tif (graphic)
.avi (movies) .mpg (MPEG movies) .mov (quicktime movie)

- by the way, JPEG stands for Joint Photographic Expert Group, the group that created the standard. This type is best for photos with many colors or shades of gray.
- GIF are graphic files; GIF stands for Graphic Interchange Format, created by CompuServ. GIF files are useful for color pictures drawn with a graphics program, since the file compression works best with a finite number (e.g. 256) of colors. Animated GIF files containing motion!