

TLN Advanced Technology Competencies

Compiled by TLN Technology Committee
November 2001

This document was compiled to assist in the selection and further education of the technology people in our libraries. It is understood that no one person on staff is likely to know everything in this document. There may be more than one technology person on staff who is responsible for specific areas within this document. Also, not all sections covered below apply to every library—Integrated Library Systems, for example, would mostly apply to a library with it's a stand-alone circulation system. Given that, the TLN Technology Committee has done a comprehensive study of the knowledge that the people responsible for the computer equipment in our libraries should strive for.

Hardware

Compiled by Paul Nau and Mark Hurley, The Library Network

MOTHERBOARD

- Know that there are different:
 - Sizes
 - Shapes
 - Power requirements
 - Sockets
 - Know that they may or may not be compatible with each other.
 - Know the function of BIOS and BIOS settings
 - Know the function of the CPU, the variety of performance sizes and Manufacturers
 - Know the function of Memory (RAM) and that accessing the chips depends on your operating system capabilities
 - Know the function of the Cable connections
 - Know what the various POST beeps mean
 - Know what function Jumpers perform

Modems

- Know that modem is an acronym for **mod**ulator-**dem**odulator
- Know what the following Modem Characteristics are:
 - Bps
 - voice/data
 - auto-answer
 - data compression
 - flash memory
 - Fax capability
- Know the differences between Internal and External modems
- Know that the telephone line quality determines maximum speed
- Know the different protocols for formatting data to be transmitted over telephone lines
- Know the different communications protocols

DRIVES

REMOVABLE

- Know the size and density characteristics of floppy disk drives
- Know the capacity and speed capabilities of the various CD-ROM/DVDs
- Know how to install, configure and troubleshoot the following ZIP & JAZ drives:
 - Parallel-Port Drives

- IDE/ATAPI Zip Drives
- SCSI Zip And Jaz Drives
- The Zip Plus

EXTERNAL HARD DRIVE

- Know the capacity, benefits and features of external hard drives.
- Know how to install, configure and troubleshoot external hard drives

NON-REMOVABLE (HARD DISK) DRIVE

- Know that the first one is Drive C and Subsequent drives are lettered to Z
- Know that they are available in many sizes from 20MB to 80GB and growing
- Know that the average life is three to five years
- Know that you should never change the orientation from horizontal to vertical. The drive wears in one position and changing the position can significantly shorten its life.
- Know that you should run ScanDisk and Defrag at least monthly
- Know that you must update CMOS setup any time you add, change or remove a hard drive

INTERFACES

Know that there are two types of drive interfaces and the differences between them:

- IDE
- SCSI

UNIVERSAL SERIAL BUS (USB)

- Know that USB carries data at the rate of 12 megabits per second, which is sufficient for "medium to low-speed peripherals".
- Know that this broad category includes telephones, digital cameras, modems, keyboards, mice, digital joysticks, some CD-ROM drives, tape and floppy drives, digital scanners and specialty printers.
- Know that USB's data rate also accommodates a whole new generation of peripherals, including MPEG-2 video-base products, data gloves and digitizers
- Know how to install, configure and maintain USB interfaces

Input Devices

KEYBOARD

- Know the difference between a QWERTY and Dvorak keyboard
- Know how and when to clean a keyboard
- Be familiar with Ergonomic keyboards

SCANNERS

Know how to install, configure and troubleshoot Flatbed Scanners and that they:

- are the opposite of a printer:
- convert paper text and images to electronic format
- are useful for those who need to archive or use graphical information already in paper form
- convert paper documents to electronic text files
- allow you to fax paper documents to others.

Know how to install, configure and troubleshoot wand and laser barcode scanners

MICROPHONES

Know that they plug into your sound card to let you input sound to your system for:

- Recording your voice to a file
- Operating voice-controlled software
- Making telephone calls

Know how to install, configure and troubleshoot microphones

MOUSE

Know the types of mice:

- Mechanical
- Optomechanical
- Optical
- Trackball
- Ergonomic

Know that mice connect to PCs in one of three ways:

- Serial mice connect directly to an RS-232C serial port. This is the simplest type of connection.
- PS/2 (bus) mice connect to a PS/2 port.
- Cordless mice aren't physically connected at all. Instead they rely on infrared or radio waves to communicate with the computer. Cordless mice are more expensive than both serial and bus mice, but they do eliminate the cord, which can sometimes get in the way.

Know how and when to clean the mouse

OUTPUT DEVICES

MONITOR

Know the relevance of and how to determine the following:

- Resolution
- Bandwidth
- Refresh rate
- Interlaced or noninterlaced
- Dot pitch
- Convergence

Be familiar with specialty monitors and accessories

- Flat Panel
- LCD
- Ergonomic Stands

Know the following:

Warning: The most important advice anyone can give you about troubleshooting your monitor is to resist the temptation to open it up. **There are high voltages up to 12,000 VOLTS present in monitors, and it is not worth the risk of injury or death to try to work on a monitor yourself.** If you can't resolve the problem with the cover on, take the monitor to a professional.

PRINTERS

Know how to install, configure and troubleshoot the various types of printers:

- daisy-wheel
- dot-matrix
- ink-jet
- laser
- LCD & LED
- line printer
- thermal printer

Know the following characteristics of printers:

- quality of type
- speed
- impact or non-impact
- graphics
- fonts

Know the difference between PCL and PostScript

SPEAKERS

Know how to install, configure and troubleshoot speakers

PROJECTORS

Know how to install, configure and troubleshoot projectors

ADD ON CARDS

Know how to install, configure and troubleshoot the following add-on cards:

- Sound Card
- Video Card
- Network Interface Card

Notebook Computers (AKA Laptop Computers)

Know the peculiarities of notebook computers such as

- Power Management
- Types of Battery Packs
- PCMCIA Cards
- CardBus
- Docking Stations
- Interchangeable Media such as CD-ROM, Floppy Disk Drive, Hard Disk Drive

Software

Compiled by Anne Barnard, Orion Township Public Library, and Karen Knox, Novi Public Library
9/29/2001

General

- Be able to install/uninstall software and customize software for your computer environment.
- Be aware of new versions of software as they are released and the features they include.
- Be able to assist your staff in utilizing the software to meet their professional needs.
- Have some good resource books on site to assist you and your staff.

Operating Systems

- Be familiar with using different operating system clients, which includes navigating electronic information, organizing folders and files, and customizing the desktop environment.
- Be able to help your library staff navigate through the OS, which includes opening/closing applications, finding files and folders, and logging on/off the network.
- Be comfortable administering different operating system servers, which includes setting up new users and groups, setting/changing permissions on files/folders, and managing your network information.

Depending on your library's computer environment, that may include any of the following

Operating Systems:

- WindowsNT/2000
- Windows95/98/ME
- Windows XP
- Unix/Linux
- DOS
- Novell Netware Client
- Mac OS

Web Browsers

- Be comfortable navigating the Internet with a Web browser, which includes opening a specific URL, searching the Internet, and saving/downloading from the Internet.
- Know the security features of your Web browser so you can set them up at public Internet stations, which includes locking down the Web browser, setting a proxy, and running in proxy mode.
- Be able to customize your Web browser for your library, which includes setting the home page, setting preferences for the browser display, and setting options for helper applications like Java.

Depending on your library's computer environment, that may include any of the following Web Browsers:

Netscape Navigator
 Internet Explorer
 Opera
 Mozilla
 K-Meleon
 Public Web Browser

Office Suite

- Be able to create and edit documents in the various office applications offered at your location.
- Be familiar with the basic features of these applications, which includes modifying document properties for layout, modifying text properties, and inserting images, tables, and clip art into documents.
- Be able to set up these applications for use on your local network (especially email applications).

Depending on your library's computer environment, that may include any of the following Office Suite applications:

MS Word
 MS Excel
 MS PowerPoint
 MS Outlook
 MS Access
 MS Project
 MS Publisher
 Corel Word Perfect
 Star Office

Web Servers

- Be able to set up and host your library's Web site, which includes publishing Web pages to your site, maintaining any server-side scripts used by your Web pages, and setting up permissions as appropriate for your Web pages.
- Know how to secure your Web server, which includes staying on top of security breaches, applying any necessary patches, analyzing your server logs, and locking down access to your server and your network.

Depending on your library's computer environment, that may include any of the following Web Servers:

Microsoft Internet Information Server
 Apache
 Netscape Server

Anti-Virus

- Be familiar with anti-virus software, which includes installing/uninstalling and solving conflicts with other software on the equipment. Anti-virus software can be server based or PC based.
- Be able to download upgrades to the software on a regular basis, and possibly create an automatic method of doing this.

Depending on your library's computer environment, that may include any of the following Anti-Virus packages:

- Symantec
- McAfee
- F-Secure
- e-Safe
- Cheyenne

Graphics

- Be able to create and manipulate graphics documents.
- Be familiar with the basic features of these applications, which includes working with color, objects, layers, frames, text, and photo restoration and enhancement.
- Be able to set up these applications for use on your local network.

Depending on your library's computer environment, that may include any of the following Graphics applications:

- MS PhotoDraw
- Adobe PhotoShop
- Adobe Illustrator
- CorelDraw
- Paint Shop Pro

Connectivity

- Be able to configure the software to connect to systems needed within your library environment.
- Be able to customize the setup to work with your computer environment.

Depending on your library's computer environment, that may include any of the following Connectivity applications:

- Smart Term
- FTP Server
- SSH
- Crosstalk
- Telnet
- QVT Term
- Anzio

Internet

Compiled by Donna Winter, Livonia Civic Center Library

Browser settings

Know the function of various preferences in Netscape and Internet Explorer.

Have a familiarity with various versions of Internet Explorer and Netscape

Be familiar with browser plug ins

- Acrobat
- Flash
- Quick Time
- Real Player

- AOL Instant Messenger
- Yahoo Instant Messenger
- Shockwave
- Windows Media Player
- E-Book Readers

Web Page Development

Know the standards. Including:

- HTML
- XML
- Cascading style sheets

Know how to set up:

- Tables
- Frames
- Forms
- Image maps

Knowledge of basic design principles, primarily page layout, style and color schemes.

Know how to work with and write

- CGI scripts
- Javascripts
- DHTML scripts

Familiarity with web based databases

- Access
- Postregess
- Various versions of SQL

Familiarity with server side includes

- ASP
- PHP
- JAVA
- XML

Knowledge of accessibility issues.

Knowledge of graphics

- Types (jpg, gif, etc.)
- File sizes
- Colors

Knowledge of web page editing software

Web services

Knowledge of the relationship between server and end user

For in house web servers

Know how to set up and maintain security, and server software.

Keep usage statistics.

Secure web pages (secure socket layer and intranet)

Computer and Network Security

Compiled by Andrew Mutch, Waterford Township

Applications

Application level security protects the various programs on your computers from tampering and misuse. They also help protect other portions of your security infrastructure by removing the ability to use the applications in a malicious way.

- Be able to install, configure and maintain application level security software to protect applications by locking down vulnerable parts of the applications. Be aware of methods like “fake” proxies and kiosk modes to control the use of the computer.
- Be able to install, configure and maintain Internet filters used to limit access to services or content on the Internet.
- Understand the difference between workstation and server-based Internet filters and how they impact your library’s Internet use.

Workstations

- Workstation level security protects the operating system of the workstation from tampering, abuse and viruses. Protecting the operating system ensures that the workstation functions effectively.
- Be able to install, configure and maintain various desktop security products including desktop replacement software.
- Be familiar with workstation “rollback” options that allow you to return a computer to its previous configuration.
- Be able to install, configure and maintain personal firewall software to protect the workstation from being attacked over the Internet by hackers and other threats.
- Be familiar with anti-virus software options and how to install, configure, maintain and update the anti-virus software on the workstation.
- Understand operating systems policies and how they protect various components of the operating system from tampering abuse.
- Be able to create and use operating system policies to protect the workstation against various threats.
- Be familiar with the workstation BIOS and how to configure it to provide additional security for your workstations.
- Be aware of the physical security needs of your workstations and methods available to protect the physical integrity of the workstation.

Servers

- Be familiar with anti-virus software options and how to install, configure, maintain and update the anti-virus software on the your server and network resources.
- Be familiar with how to properly configure your web services to protect again attack by various threats over the Internet.
- Understand how your server operating system protects against tampering and abuse and how to properly secure the server against those threats.
- Be aware of the physical security needs of your servers and methods available to protect the physical integrity of the servers.

Networks

- Understand the configuration of your network, potential risks to the network and how the network can be used to provide enhanced security.
- Be able to create, configure and implement user policies to limit the activities of users on the network.
- Understand how to configure and maintain your network firewall to protect your internal network against attacks from the Internet, control traffic over the internal network and limit access between specific workstations and servers.
- Be familiar with the configuration of your network switches and routers and how they can be configured to provide additional network security.
- Understand Network Address Translation (NAT) and how it is implemented on your network.
- Be able to develop effective password policies and implement on your network.

Integrated Security Systems

Integrated security systems provide a comprehensive package of security that protects the application, workstation, server and network levels. These systems normally have centralized management to assist administrators in securing and monitoring the system security.

- Be able to configure and manage your integrated security system on both the administrative server and workstations.
- Understand how your integrated security system operates and how it interacts with other components of your network and other library systems.
- Be able to troubleshoot the various components of your integrated security system.

Resources

- Be familiar with print and online resources that can provide information on a variety of security products, policies and threats.
- Be aware of online security resources that provide updated information about current security threats and countermeasures including patches, tools and other measures to maintain security.

Maintenance

Compiled by Karen Knox, Novi Public Library

Software:

- Understand the importance of keeping track of all the software on your computers, including the release level and licensing information.
- Be aware of new versions of software as they are released and decide whether or not it is important or possible to upgrade.
- Monitor the use of software applications and delete old or unused software as appropriate.
- Be able to run virus scans regularly to avoid corrupted software.
- Utilize system tools regularly, such as Scandisk and Disk Defrag, to optimize the performance of your computers.

Hardware:

- Understand the importance of keeping track of all the hardware in your building, including the detailed specifications, vendor and date purchased, and warranty information.
- Be able to have your equipment cleaned regularly to optimize their performance.
- Know how to troubleshoot and diagnose hardware failure and how your library handles hardware repair or replacement in a timely fashion.

Servers:

- Be familiar with keeping tape backups of the content on your servers, which includes setting up a schedule for backups, running them regularly, checking to ensure the backups are successful, and understanding how to restore from tape when needed.
- Be able to keep your servers organized, and scan them regularly for old files that are no longer needed and can be deleted to help optimize your server's performance.
- Understand the importance of using a UPS (Uninterruptible Power Supply) to protect your servers from unexpected failure.

Network

Compiled by Michael McEvoy, Northville District Library, Mark Hurley, The Library Network, and Andrew Mutch, Waterford Township

Understanding the following networking concepts

- WAN
 - Wide Area Network
 - All the libraries in TLN combine to form a Wide Area Network
 - WAN's can span the globe
- LAN
 - Local Area Network
 - All the computers within a single library or building are generally referred to as a LAN.
 - You can have several LANS within a single building.
- MAN
 - Metropolitan Area Network
- Peer-to-Peer
 - Allows users to share networked resources across multiple networked machines
- Topology
 - Star
 - Designed with each node (file server, workstations, and peripherals) connected directly to a central network hub or concentrator
 - Ring/Dual Ring
 - Every node has exactly two branches connected to it.
 - Linear/Bus
 - A linear/bus topology consists of a main run of cable with a terminator at each end. All nodes (file server, workstations, and peripherals) are connected to the linear cable.
 - Tree
 - Combines characteristics of linear bus and star topologies. It consists of groups of star-configured workstations connected to a linear bus backbone cable. Tree topologies allow for the expansion of an existing network, and enable schools to configure a network to meet their needs.
 - Mesh
 - At least two nodes with two or more paths between each node.
 - Fully Connected
 - Implies a direct path between any two nodes.
 - Hybrid
 - A combination of any two or more network topologies
- Client-Server
 - A computational architecture that involves client processes requesting service from server processes
- Terminal-Server
 - Used to serve diskless thin clients with software without the need for a harddrive or any workstation storage.
 - Provides central control of all attached clients.
- Internet
 - The mass collection of workstations and protocols that span the world, generally via the TCP/IP protocols
- Intranet
 - Network resources available internally
 - Generally NOT available outside a given defined LAN
 - Security by Firewall, Directory Permissions, IP Range, or other means
- Extranet
 - A means (hardware or software) to provide external access to Intranet resources
- Firewall
 - A combination of hardware and software that separates a LAN into two or more parts for security purposes.
- NAT

- **Network Address Translation**
- Created false IP addresses usable only behind a firewall
 - For instance, mapping the 192.168.x.x range to 206.187.92.x
- DHCP
 - **Dynamic Host Configuration Protocol**
 - A DHCP server provides dynamic assignment of IP addresses, DNS, and other network information for DHCP clients to connect to network resources
- SMTP
 - **Simple Mail Transfer Protocol**
 - Provides a means to send and receive email
- DNS
 - **Domain Name Services**
 - or **Domain Name Server**
 - An Internet service that translates domain names into IP addresses
 - Also short for **Digital Nervous System** (coined by Bill Gates)
- POP3
 - **Post Office Protocol**
 - Normal way to provide mail server access to third party/non-server clients
- IMAP
 - **Internet Message Access Protocol**
 - Permits a "client" email program to access remote message stores as if they were local

Know components of a network, including

- CSU/DSU
 - **Channel Service Unit/Data Service Unit**
 - CSU performs protective and diagnostic functions for a telecommunications line. DSU is a device that connects a terminal to a digital line. Equivalent to a very high-powered and expensive modem. Required for both ends of a T-1 or T-3 connection, and the units at both ends must be set to the same communications standard.
- Router
 - A device that connects any number of LANs.
 - Routers use headers and a forwarding table to determine where packets go and they communicate with each other and configure the best route between any two hosts.
- Switch
 - Device that filters and forwards packets between LAN segments.
 - Handles traffic more intelligently than a hub.
- Bridge
 - Connects two LANs or two segments of the same LAN. The two LANs being connected can be alike or dissimilar. Bridges are protocol -independent. They simply forward packets without analyzing and re-routing messages. Consequently, they're faster than routers, but also less versatile.
- Hub
 - Common connection point for devices in a network.
- Wireless
 - Access Points
 - WAP (**W**ireless **A**ccess **P**oint)
 - Bluetooth
 - 802.11b
 - Hardware
 - Wireless NICS
 - 128 bit or 64 bit
 - WEP (**W**ireless **E**ncryption **P**rotocol)

- Patch Panel
 - Numbering at Panel and Source
 - Cable Classifications
 - LAN Speeds
 - 10mb
 - 100mb
 - gigabit
 - dual

Communications Media

- Coaxial
- 10base-2
 - 10base-5
- Twisted Pair (Cat-3)
 - Shielded
 - Unshielded
- 10Base-T (Cat –5)
 - 100Base-T
- Optical Fiber (Cat – 6)
 - 1000Base-T
 - aka Gigabit Fiber

Network Protocols/Standards

- TCP/IP
 - Transmission Control Protocol/Internet Protocol
 - Provides connection services
- IPX/SPX
 - Internetwork Packet Exchange/ Sequenced Packet Exchange
 - Novell Protocol
 - Provides connection services similar to TCP/IP
- NetBEUI
 - NetBios Enhanced User Interface
 - Enhanced version of the NetBIOS protocol used by network operating systems such as Windows.

Data Transmission Protocols

- Ethernet/Fast/Gigabit
- Token Ring
- Fiber

Networking Software

- Windows
 - 3.11
 - 95
 - 98
 - 98 SE
 - ME
 - Millenium
 - NT
 - 2000
 - WINS
 - Windows Internet Naming Service
 - Supports network client and server computers running Windows and can provide name resolution for other computers with special arrangements.
 - aka "Name Resolution"

- XP
- Apple
 - OS9
 - OSX 10.1
 - BSD Based
- Novell
- Unix
 - Linux
 - BSD
 - FreeBSD
 - OpenBSD
 - NetBSD
 - Commercial
 - Sun
 - Solaris
 - SGI
 - Irix
 - HP
 - HPUX
 - IBM
 - AIX

Alternative Connections

- DSL
 - IDSL
 - ISDN for Digital Subscriber Line
 - ISDN line mocked up to work like a digital line.
 - Not preferred for any libraries. Not enough bandwidth (144k max TOTAL traffic (meaning less like 56k OUT and 88k IN or vice versa)
 - ADSL
 - Asynchronous Digital Subscriber Line
 - Varied speeds for inbound and outbound traffic
 - Example: 608k/s IN and 144k/s OUT
 - SDSL
 - Synchronous Digital Subscriber Line
 - Speeds are equal in and out
 - Bandwidth does NOT vary
 - Example: 512k/s IN and 512k/s OUT
- Cable
 - Asynchronous bandwidth speeds up to 1.5MB/s
 - Bandwidth dependant upon usage of others within group (LAN, WAN, or MAN)

Understanding TLN's role in connecting your library to the Internet

- Internet Connections
 - T1
 - 1.544MB/s
 - Actually 24 channels, each carrying 64Kb/s
 - Sometimes referred to as DS1
 - T3
 - About 43MB/s
 - Actually 672 channels carrying 64Kb/s
 - Maybe in the future
 - Sometimes referred to as DS3
 - Fractional T1
 - 512Kb/s

- Also 256Kb/s, and 56Kb/s
 - Fractional T1's sold in increments of 56Kb/s
 - The extra 8Kb/s per channel is used for data management.
- Catalog Servers
 - DRA Classic
 - Web 2
- Web Servers
 - Debian Linux Potato
 - Apache 1.3
- E-Mail Services
 - Sendmail
 - To provide access for third party email clients such as Outlook, Pegasus, or Communicator, POP3 and IMAP are installed.
 - Pine
 - Telnet based
 - Direct access to E-Mail on Server
 - WebMail
 - Access provided to your mail box via a web site
 - <http://tln.lib.mi.us/webmail/>
- Cache Server
 - FreeBSD
 - Squid Cache

Understanding the 7-Layer OSI Model

- Applications
 - supports application and end-user processes
- Presentation
 - provides independence from differences in data representation (e.g., encryption) by translating from application to network format, and vice versa
- Session
 - establishes, manages and terminates connections between applications.
- Transport
 - provides transparent transfer of data between end systems, or hosts, and is responsible for end-to-end error recovery and flow control
- Network
 - provides switching and routing technologies, creating logical paths, known as virtual circuits, for transmitting data from node to node
- Data-Link
 - At this layer, data packets are encoded and decoded into bits . It furnishes transmission protocol knowledge and management and handles errors in the physical layer, flow control and frame synchronization.
 - Divides into two layers:
 - Media Access Control (MAC)
 - controls how a computer on the network gains access to the data and permission to transmit it
 - Logical Link Control (LLC)
 - controls frame synchronization, flow control and error checking
- Physical
 - conveys the bit stream - electrical impulse, light or radio signal -- through the network at the electrical and mechanical level. It provides the hardware means of sending and receiving data on a carrier, including defining cables, cards and physical aspects.

Navigating your Internal LAN

- Windows Network

- Sharing Resources
 - Directories
 - Hard Drives
 - Files
 - Printers
- Using and Connections Shared Resources
 - Printers
 - CD-Roms
 - Files
 - External Drives
- TCP/IP Network Addressing
 - TLN provides from several class C blocks to libraries

Integrated Library Systems

Compiled by Anne Barnard, Orion Township Public Library and Deb Downing, Bloomfield Township Public Library

Software and Hardware Maintenance

- Be familiar with the ILS system software and hardware.
- Know the upgrade procedures and processes followed by your ILS vendor.
- Be knowledgeable of the data structures of your ILS software.
- Be able to set up and maintain system administration and customization settings of your ILS.

Depending on your library's computer environment, that may include any of the following:

- Upgrades to hardware and software
- Security Levels
- Custom report writing
- Marc formats and tags
- Load tables
- Circulation tables
- Statistics – compiling and reporting
- Backup of data and operating system
- Transaction Processing
- Indexing
- Z39.50
- Customizations to Web OPAC
- Client management and customization
- System codes
- System hours and days closed
- Client license management
- Circ backup software
- Global data updates (i.e. area code or zip code changes)
- Year end rollover of statistics and acquisitions data

Software modules

- Be knowledgeable of the modules that your library uses.
- Be able to train your library staff and patrons in the use of these modules.
- Be able to troubleshoot the modules and act as liaison with the vendor to report issues that can't be corrected locally.

Depending on your library's computer environment, that may include any of the following modules:

- Circulation

Cataloging
Serials
Acquisitions
RemotePac (telnet-text based)
Community Resources
Bookmobile
Self Checkout
Telephone renewals and notification
Homebound
Inventory
Proxy server
Materials booking
Image linking
ILL
Remote Patron Authentication
Collection Agency

ILS Vendor Information

- Be aware of the processes and procedures for working with your automation vendor.
- Be knowledgeable of new products and features available for your ILS.
- Associate with other libraries who use the same ILS system.
- Take advantage of User Groups and shared training opportunities.
- Be aware of the varying levels of depth of help desk support throughout any 24 hour period.

Depending on your library's computer environment, that may include any of the following:

Sales contacts
Helpdesk procedures
Enhancement submission process
User Group Information
Software/Hardware Maintenance plans

Third Party Vendor Interfaces

- Be aware of the third party software that can interface with your ILS.
- Be able to install or set up this software to interface with your system.
- Be able to train your library staff and patrons in its use.

Depending on your library's computer environment, that may include any of the following vendors:

OCLC
TSII
IPage
Brodart
Baker & Taylor
Encyclopedias (i.e. Britannica online)
NetLibrary
CybraryN
Numerous online subscription databases i.e.: SIRS, ABC-CLIO, H.W. Wilson, Newsbank, eLibrary, AP PhotoArchive, Infotrac, Facts On File, etc. etc.