

Final Consulting Report

Student Consultant, Meg Richards
Community Partner, Kate Grannemann

Executive Summary

I. Background Information

The Carnegie Library of Homestead is a public library made possible through the generosity of Andrew Carnegie, who dedicated it on November 5, 1898. The library is located at 510 10th Avenue in Munhall, Pennsylvania. The annual budget is approximately \$600,000.

In the words of the board of directors,

*The mission of the Carnegie Library of Homestead is to inspire the mind,
enhance the body, and bring delight to the spirit of our community.*

II. Consulting Tasks

For the first task we sought to strengthen the computing security skills of the staff. We focused on the use of strong passwords and installing antiviral and malware detection software. The administrative machines are the financial and information backbone of the library; they contain financial records, the donor database, staff information, and the schedule for room rentals.

The purpose of the second task was to create an interoffice network infrastructure to connect all of the administrative machines so the staff would be able to share files. We then researched and selected from a pool of broadband Internet Service Providers so the new local-area network could connect to the Internet.

We sought to improve the user environment of patron computers for the third task. Specifically, Kate was interested in creating a new screensaver from a collection of digital photos. The caveat of this task was the coordination of its distribution with eiNetwork, which is the remote group responsible for the user machine administration.

With the fourth task we integrated the ability to purchase tickets to events or donate online with the library's website. This feature makes it possible for patrons to shop or donate without needing to travel to the library. This convenience is likely to increase the library revenue.

Kate requested as a task we review the website and consider how it compared to other libraries as well as how to improve some weaknesses of the website. Also, the library uses EventKeeper to advertise events in the athletic club, music hall, and the library itself on its website. The American Comparative Literature Association provides the service to the library for free. Recently ACLA restricted the library's use of EventKeeper to just advertising library events, as opposed to those in the music hall or athletic club, which raised the issue of advertising the other events in a seamless manner to website visitors.

As the last task we researched a plan of implementation for wireless Internet access for patrons. WiFi in the library would alleviate the demand on library computers as well as enable those with laptops to spread out on a table with other written research instead of relegating them to the computer lab area. The availability of

wireless Internet would make the conference rooms more appealing to renters and supplement the pending proposal of opening a coffee shop inside the building itself.

III. Outcomes Analysis and Recommendations

To complete the security skills task I worked with Kate and some of the administrative staff to build their safe-computing habits. The technical environment improved with the installation of malware and virus detection software and, through working with Kate, she has the ability to:

- Recognize and implement strong passwords, and understand their importance
- Remove a virus or malware detected by Norton Antivirus, Ad-Aware, or Spybot
- Transfer records digitally and make online purchases with confidence

The staff awareness regarding the risks of a compromised machine and their desire to prevent the wasted resources in resolving the consequences of that situation serves the sustainability of this task. The largest risk will be not upgrading or properly maintaining the software. Failure to do so leaves the machines subject to the newest threats as well as a false sense of security through regularly scanning with outdated software.

The purpose of the second task was to upgrade the way the library's administrative machines accessed the Internet and network them to allow file sharing. Now the administrative office computers are networked on a LAN and use Windows File Sharing to exchange files, and they have a permanent connection to the Internet provided by a cable modem. No major network problems have occurred, and so it is difficult to gauge the amount of time it would take to fix a subtle or larger-scale problem. The installed network infrastructure of Cat5 expands the CLOH technical environment to a new modern office standard, while using Windows file sharing enhances their information management by eliminating the external disk and extra time required for transport.

The first recommendation is to create a technology plan. A technology plan is a formal way of organizing technological goals for the library. Similar to a business plan, it should serve as a roadmap that the library staff and board could follow to see how the library plans to achieve its goals.

The second recommendation is to make regular backups of important data. The current infrastructure does not have a formal method for backing up the GiftWorks donor database or important documents. In the event of a fire or computer hard-drive failure the library could be left without the ability to reconstruct the data. The risk of this situation makes it critical for the library to come up with some means to preserve and replicate data in the event of some failure.

Community Partner

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About the Consultant

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Meg Richards is a junior in Computer Science with a minor in Drama at Carnegie Mellon University. She hopes to lead an interesting life, and is doing a good job so far.

I. Context Analysis

Organization

The Carnegie Library of Homestead is a public library made possible through the generosity of Andrew Carnegie, who dedicated it on November 5, 1898. The library is located at 510 10th Avenue in Munhall, Pennsylvania. The annual budget is approximately \$600,000.

In the words of the board of directors,

*The mission of the Carnegie Library of Homestead is to inspire the mind,
enhance the body, and bring delight to the spirit of our community.*

The importance of instruction, entertainment, and happiness emphasized by Carnegie is reflected in the intellectually engaging and diverse programs offered to the public by the library.

Facilities

The library, apart from the stacks, also houses a large music hall; athletic club complete with swimming pool, weight room, and indoor track; many meeting rooms for private events; and a bowling alley that has fallen into disrepair. The floors are poured concrete, and the walls are brick; this poses a substantial problem for laying new cable. Athletic club members can access the facilities after the library closes by using a Keyscan RFID card to gain entry.

Programs

Sponsored programs are geared towards every age group, from children's story time, to adult health education, to a book club for seniors; regular membership of the latter is approximately 15 people. The library staff also teaches computer classes two students at a time to interested patrons.

Paying the athletic club membership fee gives the customer access to an indoor track and basketball court, weight room, cardio fitness room, and pool. The SilverSneakers Fitness Program is an exercise program designed for seniors who have individual Highmark Blue Cross health insurance plans focusing on improving strength, flexibility, balance, and coordination.

Staff

The administrative staff of the library consists of Kate Grannemann, the executive director herself, who handles the purchasing of all software. She uses Microsoft Office to carry out her day-to-day business and Giftworks to handle library donor information. Working closely with Kate is the business manager, Barbara Brennan, who also uses Microsoft Office and QuickBooks to do the library bookkeeping. Brian Rhodes, the development officer responsible for writing reports and grants for funding, works with Kate and Barbara. He runs Microsoft Word to do this. Chris Buggey is the athletic club director, who uses Keyscan software to make the RFID entry cards for athletic club members.

Tyrone Ward is the library director and Marge Sroka is a member of the library staff and is in charge of the reference section. She also maintains the library website, which is regularly updated. She uses EventKeeper to post events happening at the library, athletic club, and music hall on the website.

Technical Environment

Three of the four administrative machines in the office run Microsoft Windows XP as their operating system, and Brian's runs Microsoft Windows 98. Two machines were donated and a third was bought less than two years ago. All offices are equipped with two phone lines, one for an office phone Private Branch Exchange system and the other to access the Internet one person at a time via AOL. The machines are not networked together on a LAN.

Patrons and the library staff received their computers from eiNetwork, which services computers in almost all of the libraries in Allegheny County. The administrative staff is not eligible for the eiNetwork program because they manage the entire facility, and it's geared towards the library itself.

Technical Management

Computer repair for the administrative machines was done on an ad hoc basis. Very few precautionary measures for safe computing such as virus scanning and malware detection were taken. Kate had purchased and installed Norton Antivirus on her machine. The patron and library staff machines, including Marge's, are fully and successfully maintained by eiNetwork.

Technology Planning

There is no technology plan or planning committee in place, and Kate handles all of the budgeting and decides when new software or computers are needed. There is no budget for technology; new computers are generally received through donations, and money for new software is taken from the supplies budget.

Internal and External Communication

Access to the Internet was achieved through one AOL account shared among all administrative computers. This meant that only one machine could be on the Internet at a time, and external information throughput was often brought to a crawl. Barbara submits the booking records electronically every other week. She or any other staff member had to call each office before attempting to gain access to the Internet to avoid kicking someone offline. A byproduct of this

is that while all staff members have email addresses, Kate is the only one who went online to check hers regularly.

Information Management

There is no way to donate to the library online, which eliminates a funding opportunity for the library. Similarly, patrons who wish to purchase athletic club membership or tickets to fundraisers must go to the front desk of the library and purchase it there.

The athletic club member database on the athletic club computer is the only source of finding out athletic club account expirations. If a member at the front desk wishes to check his or her account expiration, the staff member must call the athletic club.

The library finances are handled by QuickBooks; donor information is organized through Giftworks, for which Carnegie Library of Homestead is a beta tester; and the library's event information is maintained by EventKeeper in conjunction with eiNetwork and displays them up on the library website.

II. Consulting Tasks

Task 1. Computing Security Skills

The purpose of this task was to strengthen the computing security skills of the staff. We focused on the use of strong passwords and installing antiviral and malware detection software. Email, financial records, and online banking are all only as secure as the password to gain entry to the information. Passwords that can deter advanced attempts at unauthorized entry are another line of information defense. The administrative machines are the financial and information backbone of the library; they contain financial records, the donor database, staff information, and the schedule for room rentals. Having machines that are properly protected and free from viruses and malware is critical to the basic functioning of the library.

With no malware detection on any computer and virus detection only on Kate's computer, it was difficult to know at first glance the extent going online had put the machines at risk. Even accessing the Internet irregularly opens the door to uninvited software, especially on a machine with no grounds for detecting such activity. Passwords for online accounts created under the library's name had a common naming scheme that was vulnerable to dictionary attacks, where an unauthorized user brute-forces an exhaustive list of words as passwords to the account in an effort to gain entry.

The starting point for protecting the administrative machines was to install the copy of Norton Antivirus 2005 Kate had already purchased on the rest of the machines in the office. We installed the freeware applications Lavasoft Ad-Aware and Spybot: Search and Destroy for malware detection. The most important element of this task was to ensure regular scanning and software updates through training. Similarly, there had to be training for each member of the administrative staff so they know the characteristics of a strong password, for example one that is alphanumeric and at least eight characters long. The final piece of training focused on important concepts of Internet security, such as being cautious with email attachments and avoiding phishing techniques, where a person attempts to gain access to personal or account information through email or other social engineering techniques.

The staff was very excited about the task because it had been something they were looking to do. A secure information infrastructure enhances the technical environment of the library and the machines are intrinsically better managed because they are protected from malicious users. It was crucial to incorporate some plan for regular updates as an element of technology planning in order to make sure the antiviral software stayed up to date or risk a false sense of security in having antiviral software, albeit out of date.

Task 2. Networking and Internet Access

For this task we created an interoffice network infrastructure to connect all of the administrative machines so the staff would be able to share files. We then researched and selected from a pool of broadband Internet Service Providers so the new local-area network could connect to the Internet.

Before the completion of this task files were shared via sneakernet, where files are placed on a floppy or CD and physically transported to another office where they are needed. This was an inherently slow operation that incurred parallel revisioning, when an original file is copied and one or both files are potentially modified creating a discrepancy about which is the most up to date.

Each office contains two phone lines, the second of which was used to connect to the Internet through a single AOL account. The 56K modems were aggravatingly slow to the point where Kate would use her DSL connection at home to take care of some office work. Also, the single account meant that only one staff member was able to go online at a time. This created a constricting communication bottleneck because of the limited access to email, which increased the response time to patrons. The electronic submission of bookkeeping records to QuickBooks Payroll performed by Barbara every two weeks was incredibly time-consuming and hindered the basic administrative functions of the library.

The cornerstone of this task was laying the cat5 network to connect the machines together and then bridging that local-area network to connect to the Internet. We gathered information on DSL Internet service providers compatible with the library's Nortel PBX telephone system as well as Adelphia's cable broadband service. Taking into account relative connection speed and cost, we selected Adelphia because it catered best to the library's Internet needs. Once the cable modem was installed we looked at two different browsers, Internet Explorer and Mozilla Firefox. Internet Explorer was selected because of the integrated Norton Antivirus toolbar and that Microsoft Update can be configured to update it, along with the regular Windows updates and Microsoft Office updates, automatically. Kate installed the network router to connect the machines together and received training to build basic network debugging skills.

The new network greatly enhances the technical environment of the library's administrative offices. The staff benefits from an increased productivity through removing the connection speed barrier, and therefore the library benefits from a better allocation of human resources. The cat5 infrastructure improved the facility by bringing it up to a modern day standard. Finally, with the ability for staff to be online concurrently, email is significantly easier to access and this will lead to more successful internal and external communication for the library.

Task 3. Technology Presentation Enhancements

We sought to improve the user environment of patron computers for this task. Specifically, Kate was interested in creating a new screensaver from a collection of digital photos. The caveat of this task was the coordination of its distribution with eiNetwork, which is the remote group responsible for the user machine administration.

The original screensaver contained an outdated list of board members and dated pictures. That conspicuous error passively suggested that the library staff was inattentive or incapable of proper administration, which is a blatant debasement of their hard work and skill.

The library support contact at eiNetwork is George Everitt, and together we were able to determine a method of updating the screensaver. After selecting high quality and timely digital photos, they are placed in a folder on the network drive that both library staff and eiNetwork

have access to, P:\screensaver. George is emailed at *everittg@einetwork.net* with a request for him to update the screensaver and he takes care of pushing the photos out to the patron machines, where the screensaver steps through each photo as a slideshow. We documented the process as a precaution against being forgotten.

The new screensaver, and more importantly the process behind its updates, advances the technology management and patron perception of technology management of the library. A positive and professional impression of the library is instilled in its visitors, and it encourages the library community at large.

Task 4. Online Donations and Ticket Purchases

With this task we integrated the ability to purchase tickets to events or donate online with the library's website. This feature makes it possible for patrons to shop or donate without needing to travel to the library. This convenience is likely to increase the library revenue.

The donation process before the completion of this task was to visit the library and pay with a credit card or to go to the website, print out a form, and mail it in with a check. To purchase a ticket to a library sponsored fundraiser or event, patrons had to go to the library and buy it there. At a time when 31% of Internet users engage in e-commerce¹, it is financially beneficial to the library to provide this service.

Network for Good is the Internet's leading charitable resource, a non-profit specializing in organizing donations and volunteering online, as well as advancing the use of the Internet as a resource, for other non-profits. They were logically selected as the service to use for receiving online donations. Kate filed the Guidestar report and signed up for electronic fund transfer service to the library bank account, and Marge added a button to the website linking to the Carnegie Library of Homestead donation page. A user can click the button, which redirects them to the donation page where they can submit the amount they would like to donate to the library. Network for Good requires each donor to have an account, but signing up for one is free and easy.

PayPal was researched and selected as the service to use for patrons to purchase tickets online. The company has a strong foundation in the e-commerce community and is one of the most popular and trusted online funding-transfer companies. It provides security and fraud-prevention, accepts credit and debit cards as well as bank account transfers, and has low transaction fees of 2.9% + \$.30 per transaction, which is similar to the standard credit card fee for merchants. Users do not have to sign up for a PayPal account in order to purchase tickets. An event tickets page was added to the library website, and it contains information on each ticket available for purchase. Using the PayPal one-time purchase option a user can click on the purchase button, be redirected to the PayPal site and pay securely, and then be redirected back to the Carnegie Library of Homestead website.

¹ According to a study by CDB Research & Consulting, Inc.

Both Network for Good and PayPal have a simple to set-up and easy to maintain front-end for the library, include tools to track donations and purchases, respectively, and have a comprehensive support center for any problems the library may encounter in the future.

The library will benefit from an added source of funding with a low cost in human and time resources. The fiscal analysis tools provided by Network for Good and PayPal make gathering statistics and information on donations easy, and Network for Good is in the advanced stages of development for a way to have Giftworks, which Kate uses to handle donor information, integrate itself and pull the donor information on Network for Good automatically into the database. The information management of the library will profit from the successful integration of the Giftworks database with Network for Good.

Task 5. Website Audit and Event Tracker

The library website was designed by the daughter of a library staff member. Kate requested as a task we review the website and consider how it compared to other libraries as well as how to improve some weaknesses of the website. A review of the website will advance the external communication of the library to its patrons by discovering any shortcomings that may hinder a patron browser from finding information he or she is looking for. Equally important, habitually seeking patron feedback on the website will advance the technology management of the organization because it keeps the site dynamic, fresh, and advancing as the library advances. The feedback mechanism will ensure that the website remains tailored to library patrons instead of becoming static, stale, and ultimately useless.

The library uses EventKeeper to advertise events in the athletic club, music hall, and the library itself on its website. The American Comparative Literature Association provides the service to the library for free. ACLA uses a back-end in affiliation with EventKeeper to manage general event information such as attendance. Recently ACLA restricted the library's use of EventKeeper to just advertising library events, as opposed to those in the music hall or athletic club, which raised the issue of advertising the other events in a seamless manner to website visitors.

Through working with the developer at EventKeeper, we are able to create a system where two separate accounts feed to the same window on the website. The library purchased a second copy of EventKeeper for the events in the music hall or athletic club and then with some minor modifications given to us we will be able to have the two accounts appear completely integrated. Marge, who was responsible for maintaining EventKeeper before, will manage the new setup.

To review the website we looked at other library websites and compared them to the CLOH website. We solicited the opinions of both those who had and had not been to the library previously, and asked them to consider how easy it was to navigate the website, if they would be able to find directions easily, and if they could discover the main features of the library through browsing, and finally the general appearance of the website. With this feedback we could consider the changes that should be made to make the website more navigable, improve its professional appearance, and ensure that the website was a true reflection of the library.

The Carnegie Library of Homestead website was designed by the daughter of a staff member. Kate ask

Task 6. Planning for Patron WiFi

Patrons who bring laptops to the library are unable to access the Internet on them. They are forced to use an in-house computer if they need to go online, which increases the wait time for a computer as well as limit their mobility for doing other research. Wireless Internet access in the library would alleviate the demand on library computers as well as enable those with laptops to spread out on a table with other written research instead of relegating them to the computer lab area. The availability of WiFi would make the conference rooms more appealing to renters and supplement the pending proposal of opening a coffee shop inside the building itself. The library may not have the current resources to support the project, but a clear plan of implementation will be beneficial in the future.

Setting up wireless in the library requires working with eiNetwork, because the wireless access point will feed directly from the patron wired network that eiNetwork maintains. This requires a flat installation fee of \$120. Beyond that, the library has a choice of paying eiNetwork \$600 for each wireless access point to install and maintain or to purchase their own hardware and maintain it themselves. In both situations the library would be responsible for configuring the patron computers to connect to the wireless network.

With an addition to the Cat5 network infrastructure of a wireless router, the facility and technical environment will be improved. An increase in the number of library patrons due to the appeal of a place to study and relax over coffee will directly aid the library and continuation or expansion of its programs. The attractiveness to technology maintenance of a wireless system maintained by eiNetwork is that it is guaranteed to function without dependency on the library staff beyond configuring patron computers.

Task 7. Reorganize Computer Classes

In order to educate the community about technology, computer classes are sponsored at the library. This task was meant to research into the current ways computer classes are taught in the library, and based on that research make a recommendation on how to reorganize it so that it can handle a higher volume of patrons.

Computer classes are taught to library patrons who request a lesson. Currently, there is a three-month waiting list of interested people because each student is taught individually or in pairs, and at the availability of the library staff. The lessons are taught on machines that are also open to the public and scattered throughout the library, so classes are restricted to the available machines.

The library lacked the technology infrastructure and resources to pursue this task. Through developing the plan for setting up wireless Internet access for patrons in the library, we've opened the doors to other possibilities for instruction. Kate is considering investing in several laptops for patron use, and with a wireless access point in one of the large conference rooms, it would be possible to teach the classes in a quiet, central location. For future expansion of this concept's capacity, an investment in a projector and screen for the conference room would

make demonstrating examples easier to large groups. It would be more appealing for outside groups to rent the conference room, and therefore increase that source of revenue.

Successful revamping of the computer classes will increase the library's capacity for technology instruction, directly serving their mission and the program itself. Being able to teach larger groups would not only increase student throughput significantly, but also make better use of staff time. The library's technical environment would advance expanding its capacity as a financial resource and promoting the library as a technology savvy institution.

III. Outcomes Analysis and Recommendations

Task 1. Secure Computing Skills

To complete this task I worked with Kate and some of the administrative staff to build their safe-computing habits. The technical environment improved with the installation of malware and virus detection software and, through working with Kate, she has the ability to:

- Recognize and implement strong passwords, and understand their importance
- Install and maintain Norton Antivirus, Lavasoft Ad-Aware, and Spybot: Search & Destroy
- Create and change a scheduled Norton Antivirus automatic scan
- Update the virus definition file for Norton Antivirus
- Remove a virus or malware detected by Norton Antivirus, Ad-Aware, or Spybot
- Identify the symptoms of an infected machine
- Transfer records digitally and make online purchases with confidence

At the start of this task the staff practiced few online security precautions. Their AOL account password was weak and subject to a dictionary attack and the EventKeeper password was only two characters. Kate had purchased and successfully installed Norton Antivirus on her machine, but there was no antiviral software on any other administrative machine. There was no malware detection on any office computer, and the initial scans indicated approximately thirty pieces per computer.

The staff awareness regarding the risks of a compromised machine and their desire to prevent the wasted resources in resolving the consequences of that situation serves the sustainability of this task. Kate received another donated computer and successfully installed the suite of malware and virus detection software. The largest risk will be not upgrading or properly maintaining the software. Failure to do so leaves the machines subject to the newest threats as well as a false sense of security through regularly scanning with outdated software. Sustainability beyond one month is secure through the witnessed regular scanning, but beyond 18 months is dependent on the software upgrades. Constant vigilance!

The mission critical digital records of the library, including the athletic club Keyscan database, Quickbooks financial records, and Giftworks donor database are protected from tampering and corruption. Strong passwords prevent illegal account access and secure the digital infrastructure of the library. Confidence in the stability and security of their computers complements a further integration of technological resources into the administrative functions of the library and using those opportunities to spend more time creating programs to benefit their patrons.

Task 2. Internet Access and Network

The purpose of this task was to upgrade the way the library's administrative machines accessed the Internet and network them to allow file sharing. At the completion of this task Kate can now

- Evaluate and select an ISP based on services and cost
- Distinguish between DSL and Cable, and the merits and drawbacks of each
- Debug simple network problems and fix them

- Access and check email regularly
- Create a shared folder on her computer and access it from another computer

Previously, the administrative staff connected to the Internet through a single AOL account one at a time. There was an extra phone line in each of the four offices at \$10/month each and the AOL account cost \$20/month, which meant that dialup cost a total of \$60 each month. Adelphia's cable service costs \$69. For an extra \$9 each month, the staff can access email, correspond with patrons, explore opportunities for funding online, and transfer the QuickBooks records, which are the financial backbone of the library, all simultaneously.

Files were transported from one machine to another through floppy diskettes or burned CDs. After laying cable to create a network, a task that proved difficult with the athletic club computer being several hundred feet and a concrete floor away from the other administrative machines, we could connect all machines together. Now the administrative office computers are networked on a LAN and use Windows File Sharing to exchange files, and they have a permanent connection to the Internet provided by a cable modem. Creating a shared folder on Kate's computer that Barbara has the ability to access gave them the opportunity to share access to the Giftworks donor database.

The task is sustainable for the next 6-18 months because exposure to a significantly faster and easier way to access the Internet that does not bottleneck when more than one person wants to go online raised the bar of expectation for the staff. The biggest risk is to the use of shared folders using Windows file sharing, since the nuances of its remote access are easy to forget. No major network problems have occurred, and so it is difficult to gauge the amount of time it would take to fix a subtle or larger-scale problem. However, it would take substantially more time and effort to revert back to the old dial-up system than it would to slowly and methodically debug any network issues that arise; The task is secure in the successful embrace of its implementation.

The installed network infrastructure of Cat5 expands the CLOH technical environment to a new modern office standard, while using Windows file sharing enhances their information management by eliminating the external disk and extra time required for transport.

Task 3. Library Patron Presentation Enhancements

This task sought to improve the presentation and user environment of patron computers by means of a screensaver. Kate and I sorted through her collection of digital photos and she selected the best ones for the screensaver. eiNetwork controls the user settings for each machine and is directly responsible for installing the screensaver. George Everitt (everittg@einetwork.net) is the CLOH contact at eiNetwork, and a request to update the images is sent to him. The images are placed on a shared network drive of a computer maintained by eiNetwork at CLOH. Once there, George has access to them and can push out the new screensaver to all patron computers. Kate has successfully transferred images to the network drive and had the images update without assistance.

The previous screensaver reflected poorly on the library technology maintenance and its professional image by containing an outdated list of board members and limited current photos. Kate did not know how to update the screensaver, nor did any of the library staff.

Changing the photos at specified intervals, either every few weeks, seasonally, or for each library event where photos are taken will decrease the biggest risk that the update process will be lost and forgotten in the future. The risk is also mitigated by Kate's demonstrated ability to maintain the screensaver as well as utilize the open lines of communication and support from eiNetwork. Beyond that hurdle, the task is sustainable for the next 6-18 months and the task will have met its full capacity.

Regularly updating the screensaver to be current and of good quality photos increases the technology management capacity of the library. An up to date and well-presented computer user environment supports the image of the library as a technology embracing institution of learning. Constant encouragement of the community, both physically and mentally, is one of the most important functions of the library, and an opportunity to forum its successes is now effectively implemented.

Task 4. Online Donations and Fundraiser Ticket Purchases

To complete this task we explored secure online means by which patrons could make donations to the library through Network for Good (<http://www.networkforgood.org>) or purchase tickets to fundraisers through PayPal (<http://www.paypal.com>). Through working with Marge, we were able to integrate the two services into the current website. Kate will be responsible for the financial back-end, and has proven she is now equipped to:

- Receive donations online and electronically transfer them to the CLOH bank account
- Analyze online donation statistics from the Donation Tracking Report on Network for Good
- Retrieve donor information from Network for Good to add to the Giftworks donor database
- Receive payments for fundraiser tickets online from PayPal and transfer them to the CLOH bank account
- Incorporate a PayPal checkout into a fundraising event web page

Originally there was no way to donate online. People interested in donating could print out a form online and send it in with a check, or they could come into the library and pay with cash or credit. Fundraiser tickets were sold at the front desk of the library.

With no active fundraising ticket sales, the PayPal checkout has not been tested in a real situation as of this date. The riskiest piece to the success of this task will be dealing with problems that occur during the first few events, and reverting to the old method of ticket sales is particularly likely. The Network for Good online donations part of the task is significantly more sustainable, owed mostly to the supportive backend they provide. The non-profit tools and resources interface is particularly conducive to retrieving donor information and GiftWorks is proceeding with plans to automatically integrate the two services. Finally, there is an automatic deposit in the form of an electronic funds transfer to the CLOH bank account as configured by Kate. Expanding the funding opportunities of the library presents them with the

ability to implement new patron programs and services, as well as supplement the information management of donors.

Task 5. Website Audit and Event Tracker

This task focused on an evaluation of the library's preexisting website (<http://homesteadlibrary.org>) hosted by eiNetwork. By soliciting outside opinions through surveys and consulting professionals in similar organizations Kate and I explored the weaknesses and strengths of the current website and possible improvements, including making the website appear more professional and removing the design quirks that made the site appear drastically different to different browsers, namely Mozilla Firefox and Internet Explorer. Finally, the completion of task four required sections to be added and modified. Through discussion and research, she is now familiar with the basics of online design, including navigability, use and implementation of a links bar consistent throughout the entire site; and can make informed decisions regarding the website structure based on that knowledge, and effectively communicate those decisions to the Webmaster, Marge Sroka.

The sites also contained an events calendar using the software EventKeeper provided by ACLA. Recent requirements for the license restricted its use to library-only events, meaning events in the athletic club or music hall could not be included any longer. Additionally, the eiNetwork backend to EventKeeper kept statistics on library events and it could not be abandoned. The additional account integrated with the older one appears the same to website visitors, and requires the same methods for updating the calendar. This way, the solution is maintained essentially in the same manner as the original situation, making it easy to adjust and cater to.

The clearest benefit to library is in the form of an expanded capacity for technology and information management. An easily navigable website with a strong refined design enhances the library's professional appeal. Reducing patron frustration in retrieving information from the library website incurs more frequent use as a resource and the support of the community.

Task 6. Planning for Patron WiFi

The purpose of this task was to explore the cost and opportunities of setting up wireless Internet access in the library for patron laptops. The possibility had not been explored before, nor was there a fundamental understanding of what it entailed. At the completion of this task, Kate has the ability to

- Identify the hardware associated with WiFi as well as their respective purposes and approximate costs
- Configure a laptop to access a WiFi network without WEP
- Proceed forward with its installation when the time is right for the library
- Decipher the technical components of the eiNetwork Service Level Agreement "WiFi Service for Libraries" and be able to comply successfully

This task does not involve any actual execution of the plan itself. Therefore, the biggest threat to its completion is a problem during the implementation itself. The advantage that using eiNetwork to support the access points presents is complete maintenance of the hardware for a

one-time cost of \$600 per access point. While the \$120 initial setup fee that allows the library to use its own hardware is cheaper in the short-term, the resource cost of maintaining and troubleshooting hardware problems is likely to be exceed \$600.

Sustainability would be guaranteed with the delegation of the hardware maintenance to eiNetwork, assuming the initial financial hurdle could be surpassed. The risk associated with a staff-maintained wireless router would undoubtedly be the possibility for it to fall into a permanent state of disrepair.

Patron WiFi can serve the library and its mission tremendously, including

- Liberating desktop machines used by patrons who previously could not access the Internet from their laptop, easing the wait time for a library computer
- Allowing change to the structure of computer classes taught at the library through new use of laptops with a projector screen in the conference room leading to a higher throughput of students
- Giving patrons the ability to access the Internet at the same table their work and books are spread out on
- Augment the potential success for plans to open a coffee shop in part of the building by attracting customers
- Enhance the technical environment with a cutting edge service

Recommendation 1. Technology Plan

A technology plan is a formal way of organizing technological goals for the library. Similar to a business plan, it should serve as a roadmap that the library staff and board could follow to see how the library plans to achieve its goals.

Incorporating technology into the formal plans of the administrative backend to the library will give it the opportunity to become a smaller burden and bigger resource to the staff. The technology plan would lead the administrative staff away from the ad-hoc maintenance of the current computer infrastructure and towards a safer more sustainable system.

A good technology plan relies much more on good planning skills than a degree in computer science. With the speed at which technology advances, knowing what the questions are and where to look for the answers is far more important than knowing the answers.

The key steps to getting a technology plan in place include:

- Forming a technology committee comprised of the Executive Director, Webmaster, representative from the Board of Directors, Business Manager, and a consultant or community member comfortable with technology to serve as a reference.
- Using <http://www.techatlas.org> as a backend for the CLOH technology plan, which focuses on technology planning for nonprofits.
- Exploring sample technology plans to integrate positive aspects of each into the CLOH's technology plan.
- Looking for each element of the plan to focus on a desired output of its implementation instead of purposeless methodical upgrades.

- Meeting frequently during the initial weeks of its formation to get the document written and approved by the library community.
- Once a plan is put into place, semi-annual meetings should be held to revise the document and keep it up to date and supporting the library's mission.

The strength and utility of the CLOH technology plan will depend on the success of its adherence by the administrative staff and library visionaries, as well as its treatment as a working document for future years advancing as technology advances.

Resources for the implementation of a technology plan include:

- TechAtlas (<http://www.techatlas.org>) serves as a resource to nonprofits looking to implement and maintain a technology plan. Its four-step focus is to “envision, assess, prioritize, and act,” and it supports each step by providing free planning and evaluation tools to nonprofits.
- Microsoft published an article on the fundamentals of writing a technology plan and the appropriate steps for doing so (<http://www.microsoft.com/enable/business/plan.aspx>)
- The Solano Community College Library's technology plan, which serves as an example plan suitable for a library (http://www.solano.edu/tech_learn_resources/techplan/2nd_Library.pdf).

Recommendation 2. Regular Backups

The current infrastructure does not have a formal method for backing up the GiftWorks donor database or important documents. In the event of a fire or computer hard-drive failure the library could be left without the ability to reconstruct the data. The risk of this situation makes it critical for the library to come up with some means to preserve and replicate data in the event of some failure.

Backups can be as simple as burning a CD with the mission critical documents at the end of each week and taking it home, printing the most important documents regularly, or using an online information backup system such as <http://www.firstbackup.com>. Eventually, perhaps as a byproduct of the technology plan, the library can consider more formal means of data backups such as tape drives removed weekly and stored in an off-site location.

Important steps to consider when implementing a backup system include:

- Ability to recover data from a backup after a fire. Is the backed up data offsite?
- After a catastrophe it will be difficult to remember every detail of the data recovery. Consider making a checklist that will help get CLOH back on its feet.
- Make the backups regular, ideally handled by software that can schedule it automatically. This will decrease the risk of forgetting to do it and potentially losing more data than expected.
- Future technology advances should be taken into account. CDs are the 8-Tracks of today and obsolete media is as hard to read as destroyed media.
- The easier it is to use a backup system, the more likely it is to be implemented and used often.

Useful resources for information on backups:

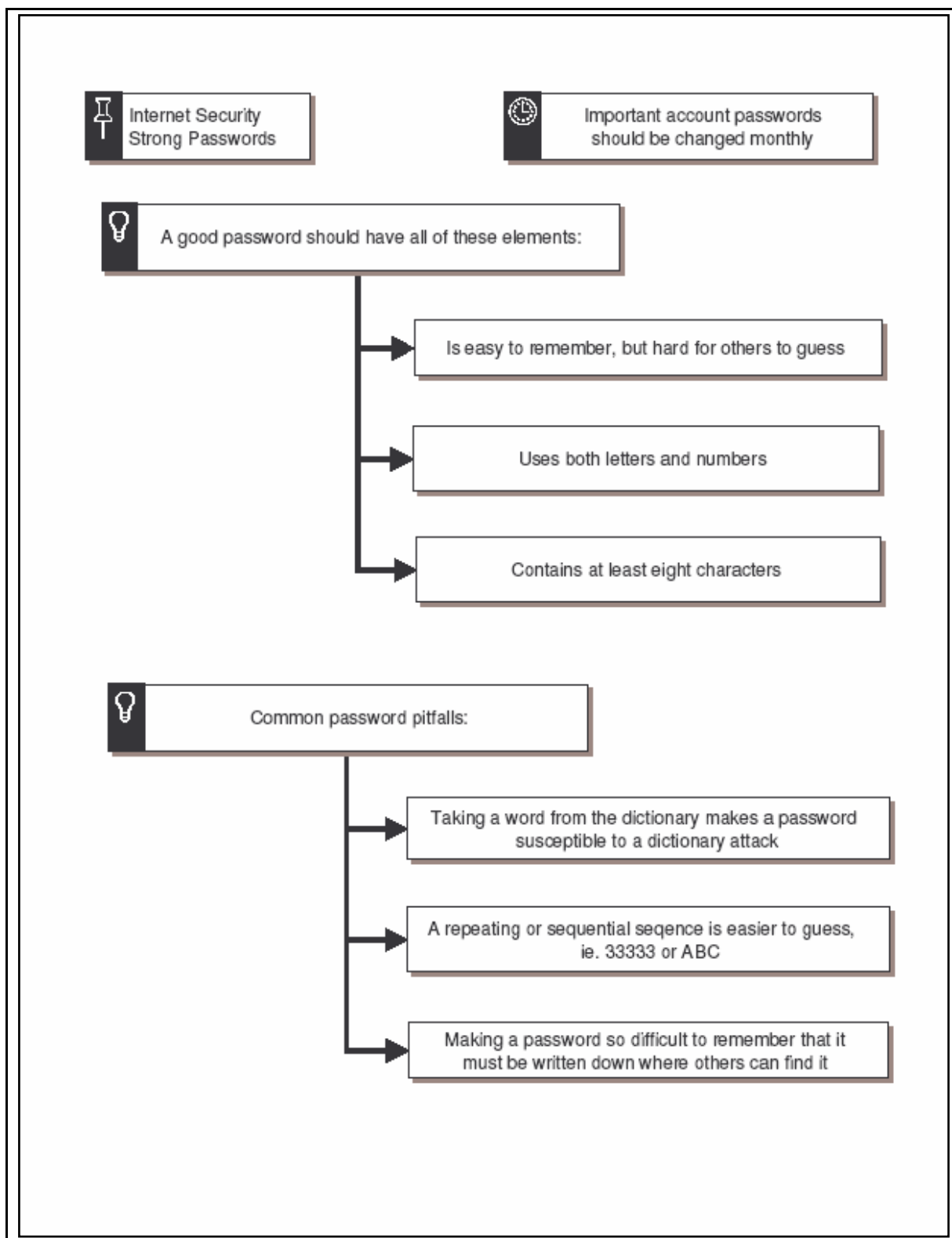
- TechSoup hosted an electronic bulletin board discussion on different online backup vendors. Hearing what other nonprofit leaders have to say on the various companies could provide insight into which vendor may be right for CLOH.
(<http://www.techsoup.com/fb/index.cfm?fuseaction=forums.showSingleTopic&forum=2030&id=55969&cid=117&cg=searchterms&sg=online%20backups>)
- Wikipedia's article containing the most important considerations for a backup system and recovery plan. (<http://en.wikipedia.org/wiki/Backup>)
- "Technology Issues of Nonprofits" was a workshop that emphasized the importance of convincing clients to implement secure data recovery methods. The key points, including the hazards and ways to adopt certain preventative measures, were documented here, <http://www.uploads.nten.org/gems/PeerExchangeSessions.pdf>

About the Consultant

Meg Richards is a junior in Computer Science with a minor in Drama at Carnegie Mellon University. She hopes to lead an interesting life, and is doing a good job so far.

Appendix A.

Reference guides for secure computing.





Internet Security Common Predator Techniques



Dictionary Attack:

This is a way for an unauthorized user to gain entry to an password-protected account by brute-forcing an extensive list of words as the account password. This is why any word found in a dictionary is a weak choice for a password.



Phishing:

Phishing is when a predator uses various social engineering techniques to procure personal information like account passwords, credit card numbers, and social security numbers. The information is then used to fake the victim's identity and perform unauthorized account activities.



Spoofing:

Setting up a malicious website meant to mimic or "spoof" a trusted website in order to confuse a victim into handing over personal account information is called spoofing. It is typically used in conjunction with phishing, whereby a victim is sent an email regarding some account activity which contains a link to the malicious website that prompts for the account information.



Additional References:

"Hacking Techniques, an Introduction to Password Cracking"
<http://www-128.ibm.com/developerworks/library/s-crack/>

"Strong Passwords: How to Create and Use Them"
<http://www.microsoft.com/athome/security/privacy/password.mspx>


"Security Glossary, Common Security Terms and Their Definitions"
<http://www.dollarbankbusinesscenter.com/security/glossary.html>

Appendix B.

Reference guide for maintaining Lavasoft Ad-Aware.

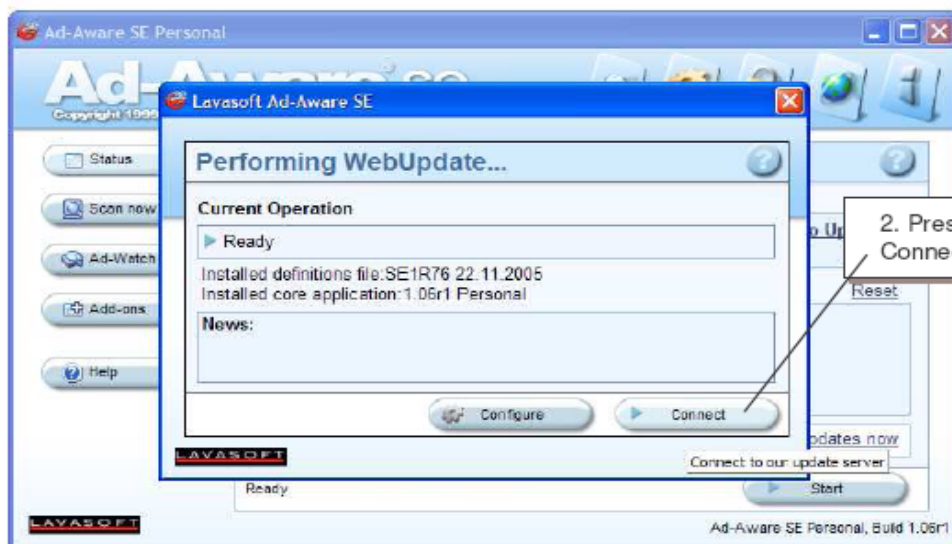
<http://www.lavasoftusa.com/software/adaware/>

 Lavasoft Ad-Aware
Virus Updates 1

 Should happen:
Monthly

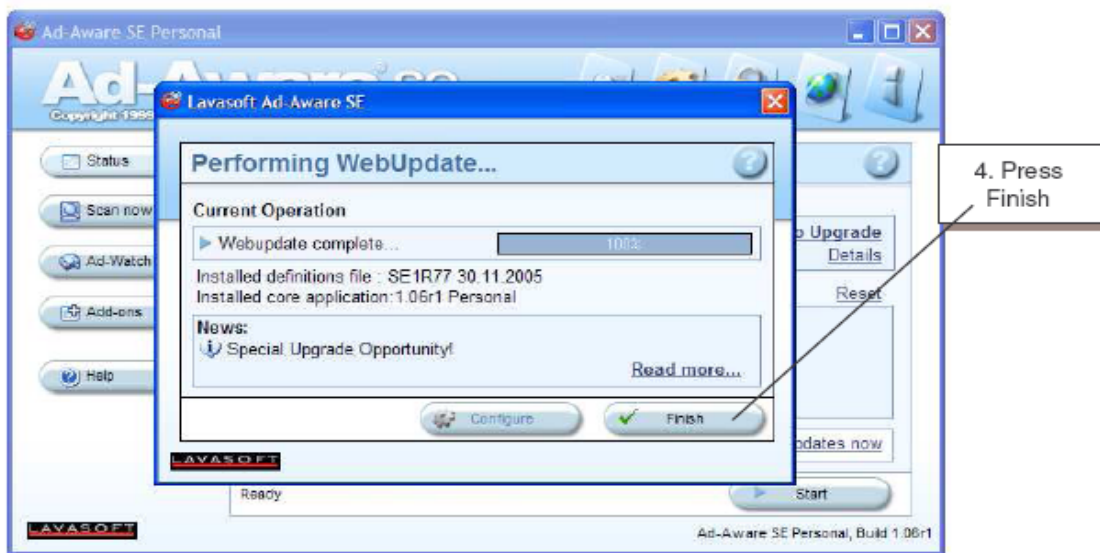
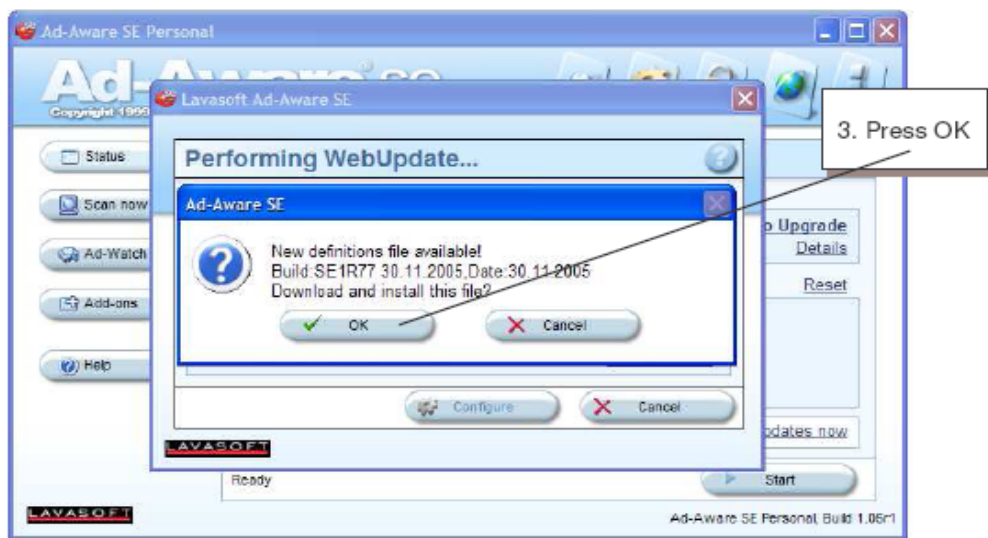


1. Press
WebUpdate
Icon



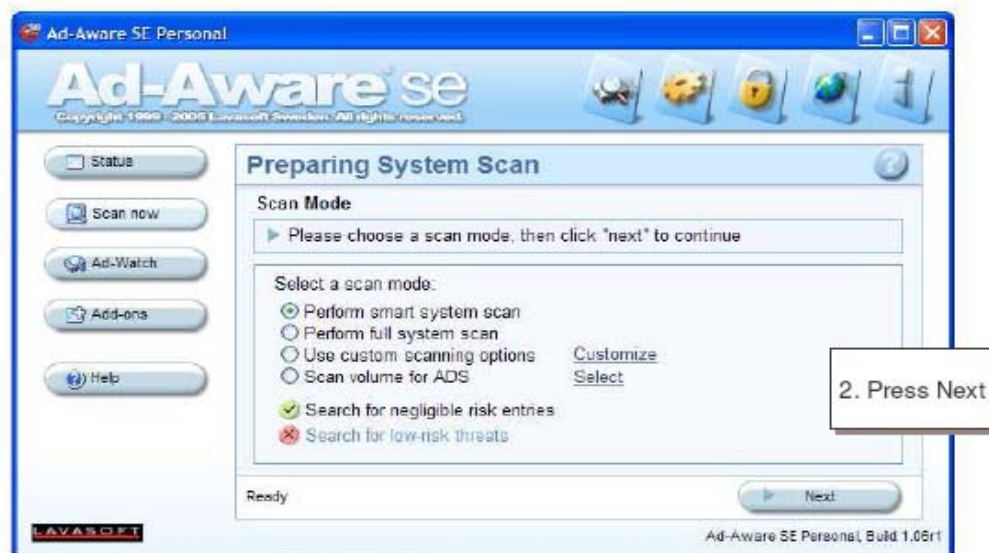
2. Press
Connect

 Lavasoft Ad-Aware
Virus Updates 2



Pin Lavasoft Ad-Aware Scanning 1

Should happen: Weekly



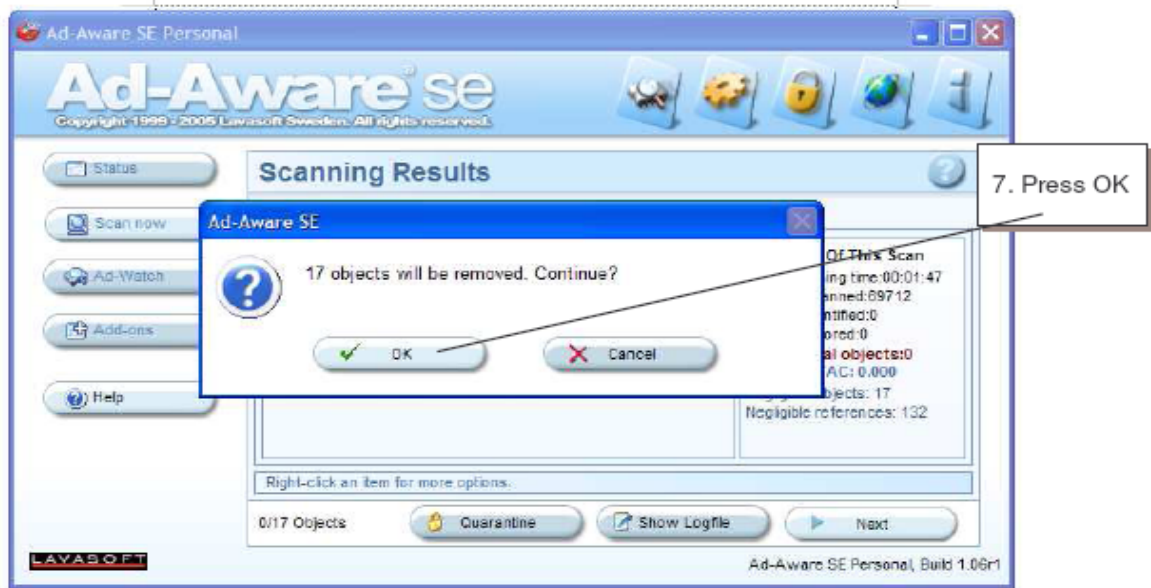


Lavasoft Ad-Aware Scanning 2





Lavasoft Ad-Aware
Scanning 3

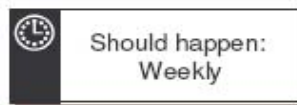


8. Exit when
finished

Appendix C.

Reference guides for maintaining Spybot: Search and Destroy.

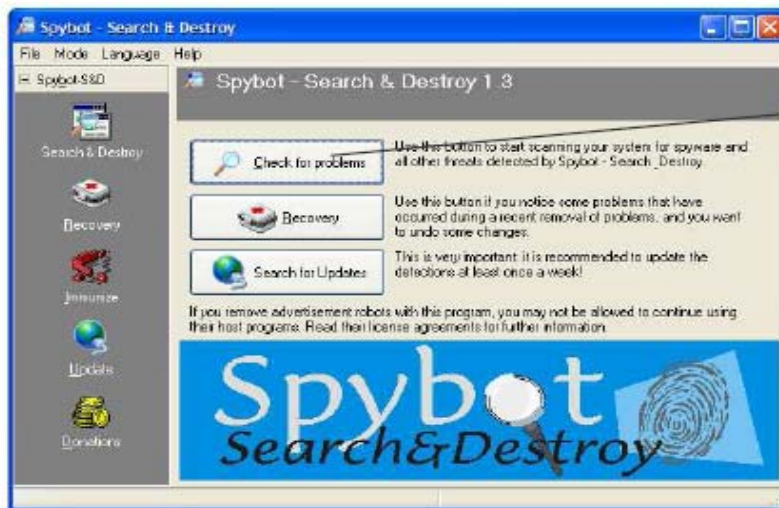
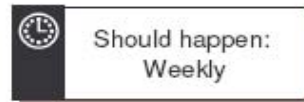
<http://www.safer-networking.org/en/download/index.html>



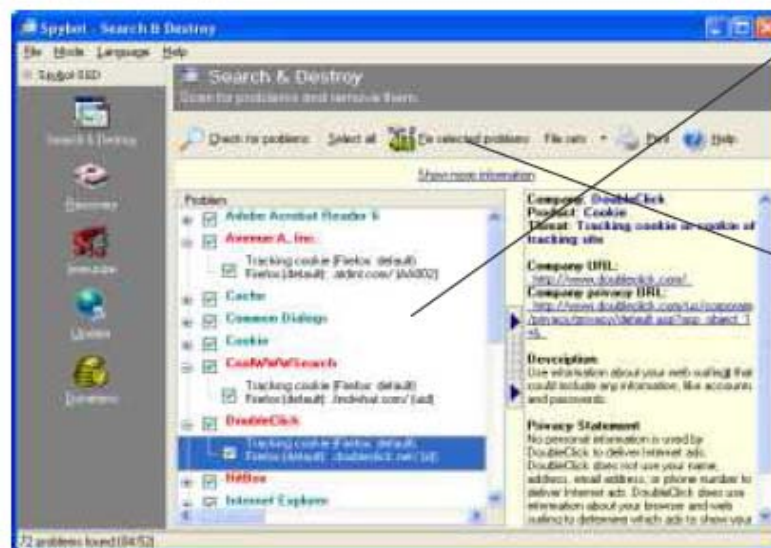
1. Press Search
for Updates



2. Press
Download
Updates



1. Press Check for Problems




2. Select all checkboxes under Problems


3. Press Fix Selected Problems

Appendix D.

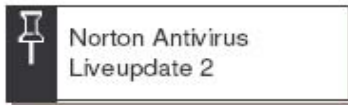
Reference guide for maintaining Norton Antivirus.


<http://www.symantec.com/>


 Norton Antivirus
Liveupdate 1

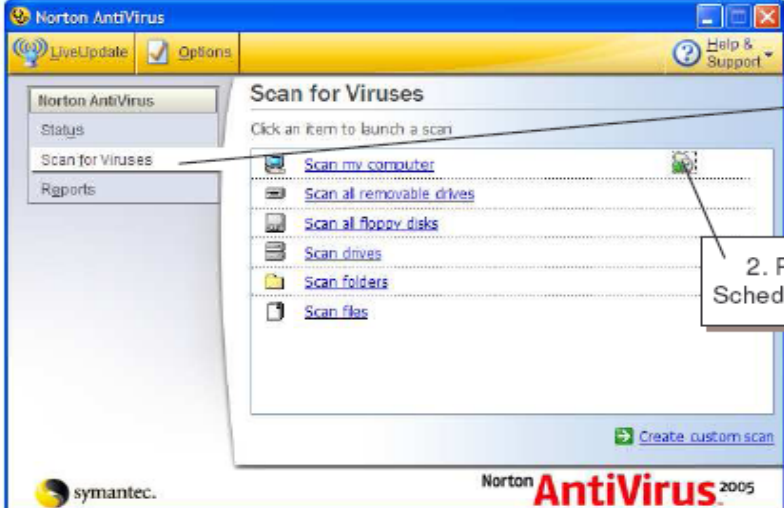
 Should happen:
Monthly



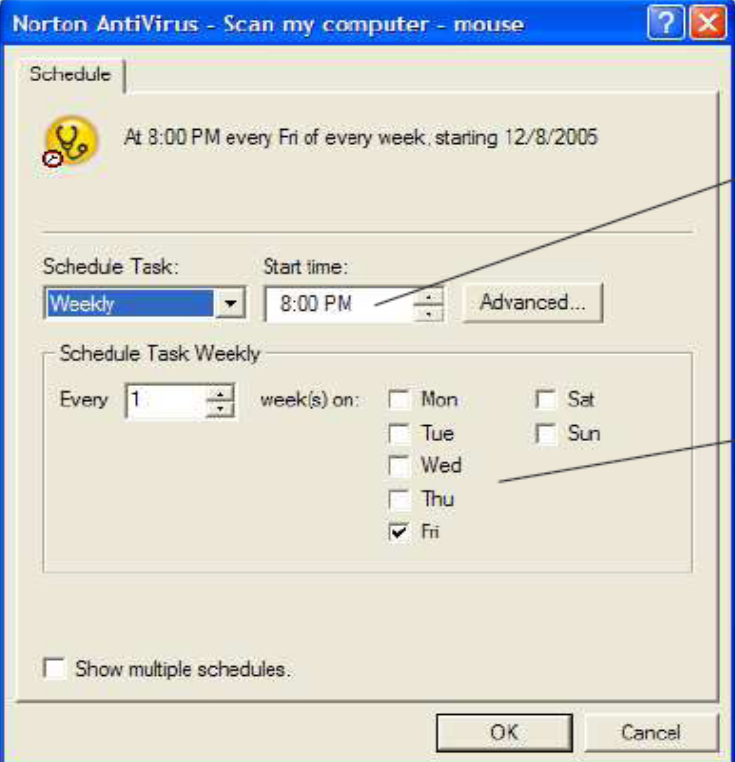


 Norton Antivirus
Scheduled Scan


 Should happen:
Weekly




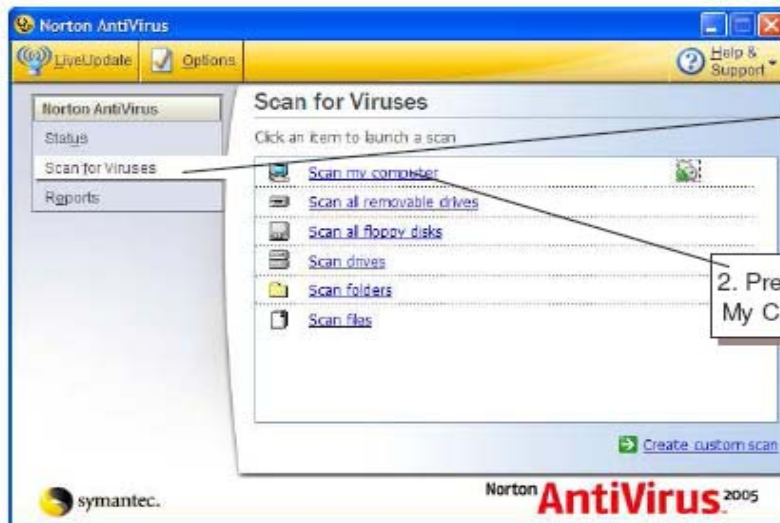
The screenshot shows the 'Scan for Viruses' window in Norton AntiVirus 2005. The left sidebar has 'Scan for Viruses' selected. The main area lists scan options: 'Scan my computer', 'Scan all removable drives', 'Scan all floppy disks', 'Scan drives', 'Scan folders', and 'Scan files'. A 'Create custom scan' button is at the bottom right. Annotations include: '1. Press Scan for Viruses' pointing to the sidebar, and '2. Press Schedule Icon' pointing to a small clock icon next to 'Scan my computer'.



The screenshot shows the 'Schedule' tab of the 'Scan my computer - mouse' dialog. It displays a schedule: 'At 8:00 PM every Fri of every week, starting 12/8/2005'. Below, the 'Schedule Task' is set to 'Weekly' and the 'Start time' is '8:00 PM'. The 'Schedule Task Weekly' section shows 'Every 1 week(s) on' with checkboxes for days of the week: Mon, Tue, Wed, Thu, Fri (checked), Sat, and Sun. Annotations include: '3. Select Time of Scheduled Scan' pointing to the '8:00 PM' time field, and '4. Select Day of Scheduled Scan' pointing to the 'Fri' checkbox.

 Norton Antivirus
Manual Scan

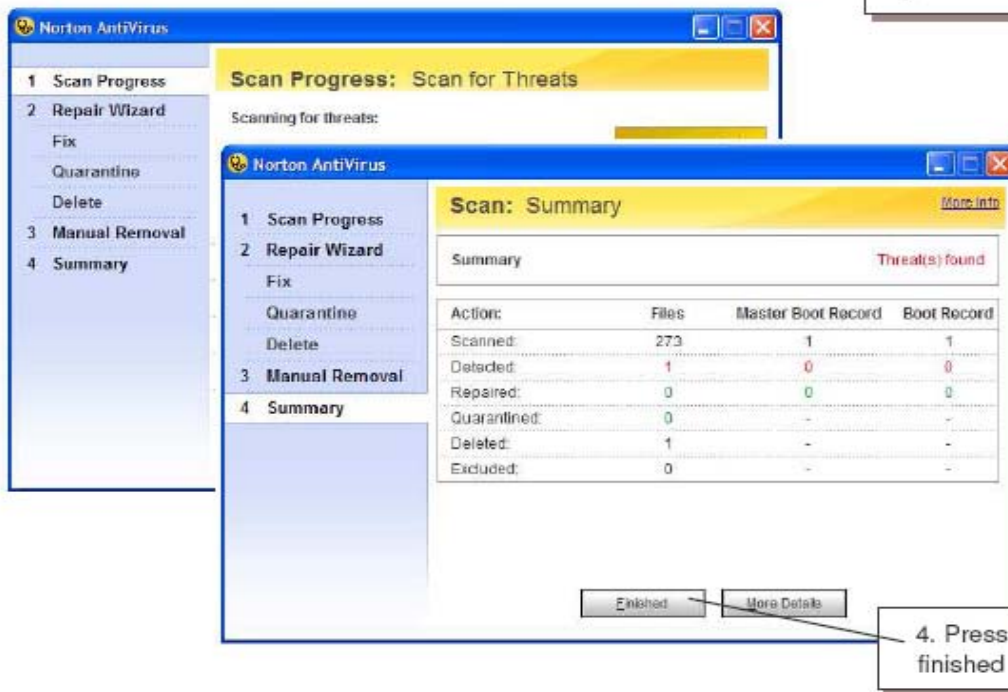
 Should happen:
In lieu of
scheduled scan



1. Press Scan
for Viruses

2. Press Scan
My Computer


3. Norton will
begin scanning




4. Press
finished

Appendix E.

Configuring Windows XP to automatically download and install updates.

 **Windows Update Automatic Update**

 **Should happen: Daily**

Windows Security Center

Security Center

1. Go to **Start > Settings > Control Panel > Security Center**

- Firewall **ON**
- Automatic Updates** **ON**
- Virus Protection **ON**


Manage security settings for:

- Internet Options
- Automatic Updates**
- Windows Firewall

2. Press **Automatic Updates**

Automatic Updates


Automatic Updates

 **Help protect your PC**

Windows can regularly check for important updates and install them for you. (Turning on Automatic Updates may automatically update Windows Update software first, before any other updates.)

How does Automatic Updates work?

☒ **Automatic (recommended)**


 Automatically download recommended updates for my computer and install them:

Every day 3:00 AM

☐ Download updates for me, but let me choose when to install them.

☐ Notify me but don't automatically download or install them.

☐ Turn off Automatic Updates.

 Your computer will be more vulnerable unless you install updates regularly.

Install updates from the [Windows Update Web site](#).

[Offer updates again that I've previously hidden](#)

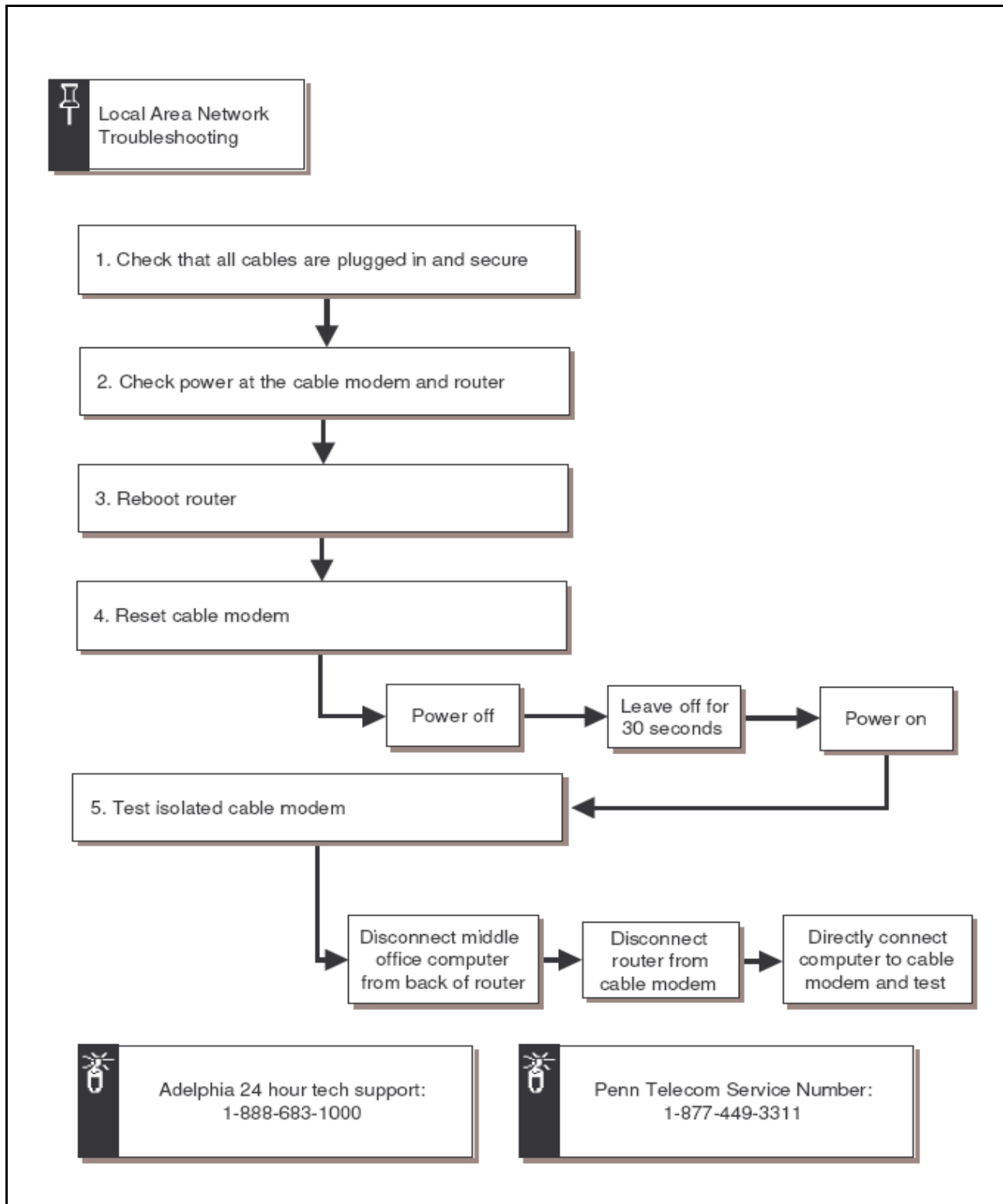
3. Select **Automatic**

4. Select a time to automatically install updates

5. Press **OK**

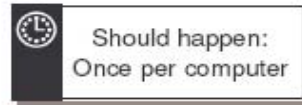
Appendix F.

Network troubleshooting guide.

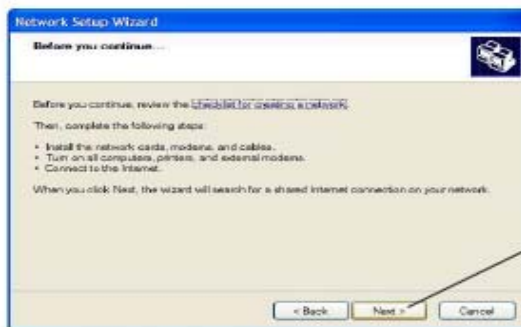


Appendix G.

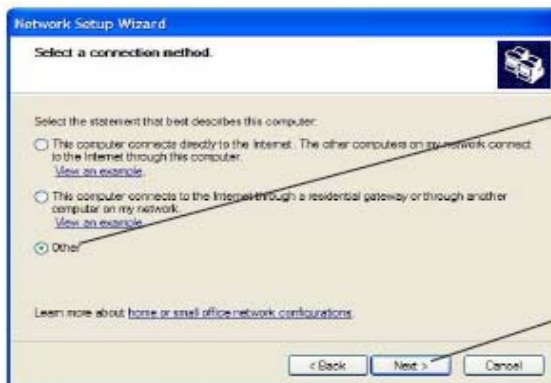
Creating and accessing a shared folder in Windows XP.



1. Press Next



2. Press Next



3. Select Other

4. Press Next



Shared Folders Initial Setup 2

Network Setup Wizard

Other Internet connection methods...

Select the statement that best describes this computer:

- ☒ This computer connects to the Internet directly or through a network hub. Other computers on my network also connect to the Internet directly or through a hub.
[View an example.](#)
- ☐ This computer connects directly to the Internet. I do not have a network yet.
[View an example.](#)
- ☐ This computer belongs to a network that does not have an Internet connection.
[View an example.](#)

Learn more about [home or small office network configurations.](#)

< Back Next > Cancel

5. Select the first option, specifying the computers are networked on a hub and connect to the Internet through that

6. Press Next

Network Setup Wizard

Give this computer a description and name.

Computer description:
Examples: Family Room Computer or Monica's Computer

Computer name:
Examples: FAMILY or MONICA

Learn more about [computer names and descriptions.](#)

< Back Next > Cancel

7. Describe the computer

8. Come up with a simple name for the computer

9. Press Next



Shared Folders Initial Setup 3

Network Setup Wizard

Name your network.

Name your network by specifying a workgroup name below. All computers on your network should have the same workgroup name.

Workgroup name:

Examples: HOME or OFFICE

< Back Next > Cancel

10. Specify CLOH as the library workgroup

11. Press Next

Network Setup Wizard

File and printer sharing

Turning on file and printer sharing makes the Shared Documents folder available to everyone on your network. It also gives everyone access to a shared printer if one is available.

What do you want to do?

☒ Turn on file and printer sharing
Windows Firewall will be configured to allow file and printer sharing on your network.

☐ Turn off file and printer sharing
Windows Firewall will block file and printer sharing on your network. If you currently have shared files or printers, they will no longer be shared.

< Back Next > Cancel

12. Select to turn on filesharing

13. Press Next

14. Press Next

To apply these settings, click Next.

< Back Next > Cancel

Network Setup Wizard

You're almost done...

You need to run the Network Setup Wizard once on each of the computers on your network. To run the wizard on computers that are not running Windows XP, you can use the Windows XP CD or a Network Setup Disk.

What do you want to do?

☐ Create a Network Setup Disk

☐ Use the Network Setup Disk I already have

☐ Use my Windows XP CD

☒ Just finish the wizard; I don't need to run the wizard on other computers

< Back Next > Cancel

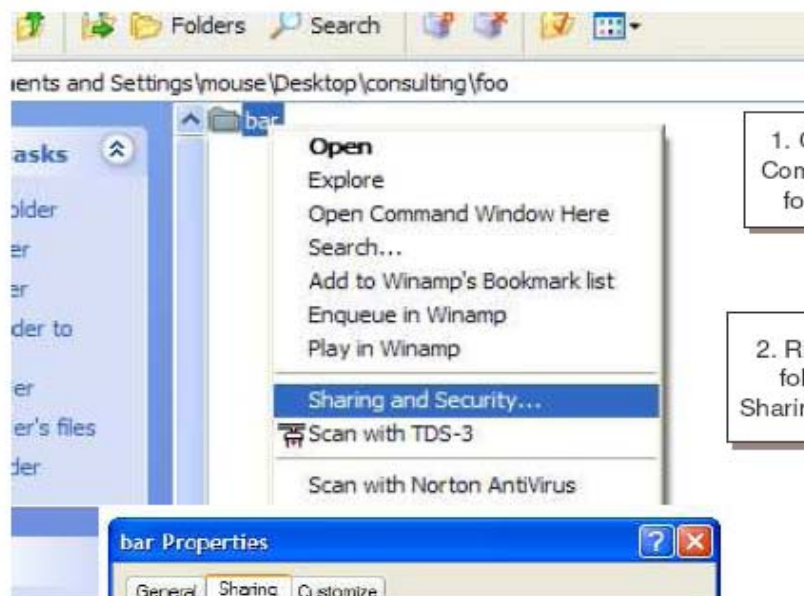
15. Specify you want to finish the wizard

16. Press Next

17. Press Finish



Shared Folders Making a Share



1. Go through My Computer and find folder to share

2. Right click on the folder and go to Sharing and Security...

3. Check Share this folder

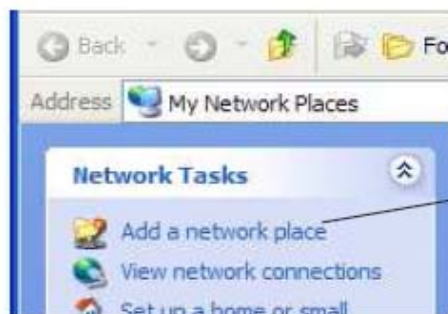
4. Check allow network users to modify files

5. Click OK

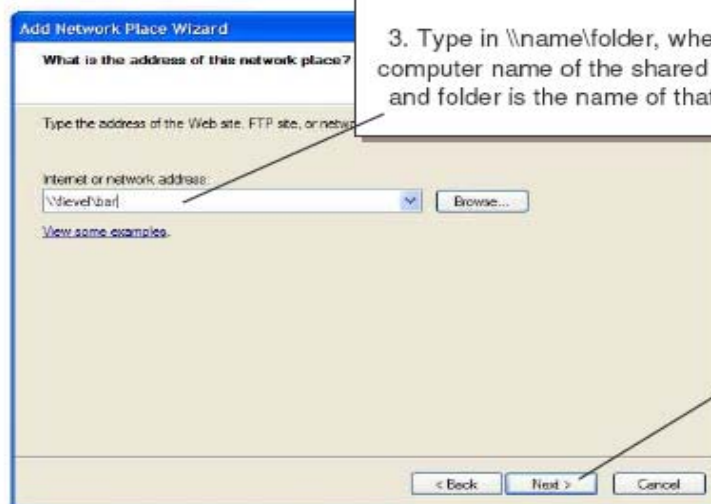


Shared Folders Accessing a Share

1. Go to **Start > My Network Places**



2. Select **Add a network place** under Network Tasks



3. Type in **\\name\\folder**, where name is the computer name of the shared folder location, and folder is the name of that shared folder

4. Press **Next**



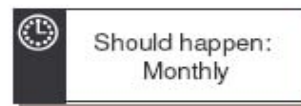
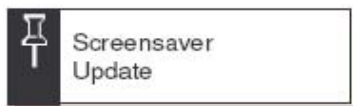
5. Press **Next**



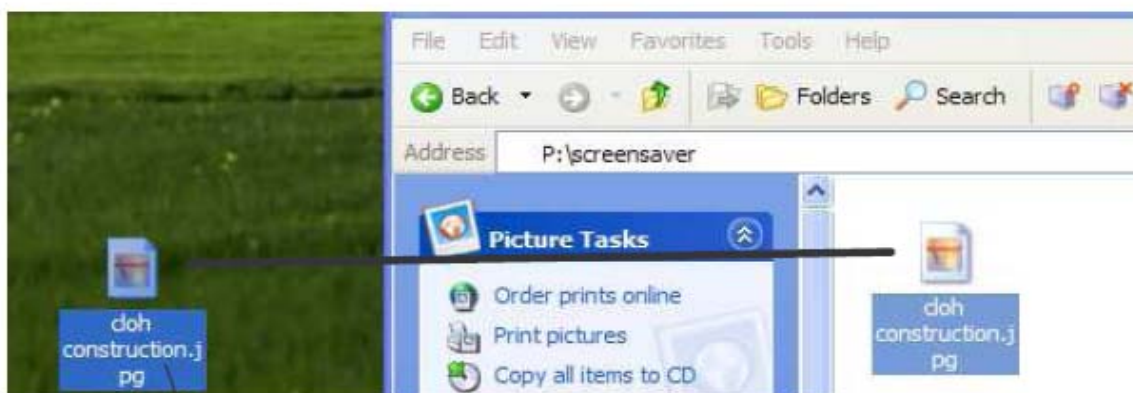
6. Press **Finish**

Appendix H.

Screensaver update procedure.

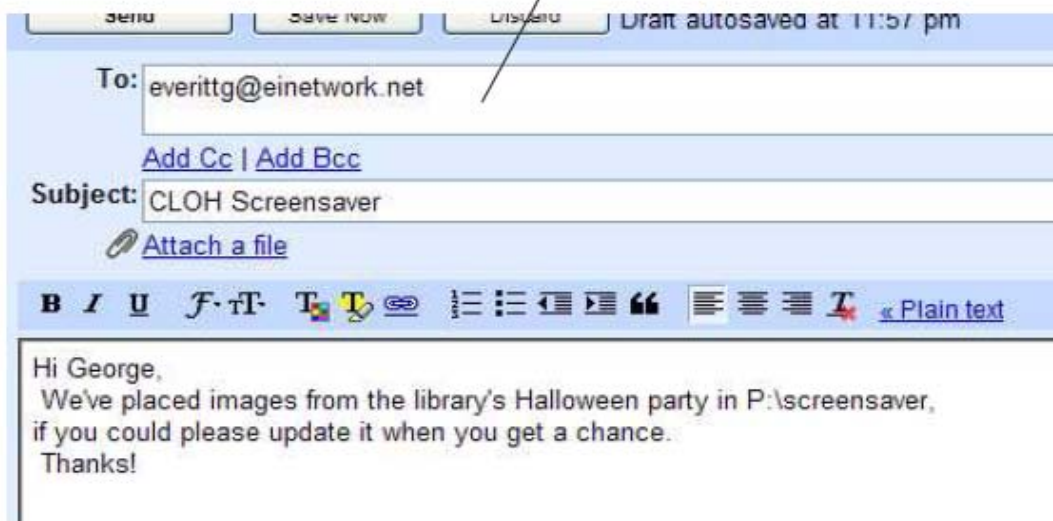


1. Go to **My Computer** > **P:** > **screensaver**



2. Drag images from Desktop or CD to folder

3. Email eiNetwork contact



Appendix I.

Library homepage with EventKeeper integrated feeder window.

<http://www.homesteadlibrary.org>


Carnegie Library of Homestead

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Print Mail

Address <http://www.homesteadlibrary.org/ein/homestead/index.html>

Library
Athletic Club
Music Hall
Events Calendar
Facility Rental
Catalog
Policies
Hours and Location
Giving and Volunteering
Online Reference
Search the Net
eiNetwork Libraries
Knowledge Partners
Community



Carnegie Library of Homestead

510 10th Avenue
Munhall, PA 15120
(412) 462-3444

Carnegie Library of Homestead		
Dec 10, 2005	3:00 PM	Victorian Christmas Festival Concert & Dinner
Dec 11, 2005	7:00 PM	Three Rivers Young Peoples Orchestras - Winter Concert
Dec 17, 2005	5:00 PM	Wassail Holiday House Tour
Dec 22, 2005	12:00 PM	Open House and Tour of Carnegie Library of Homestead
Jan 6, 2006	5:00 PM	Books-into-Film Group to Watch Big Fish

Powered by EventKeeper

The Carnegie Library of Homestead includes a Music Hall, Library, and Athletic Club. Designed in the French Renaissance style, it sits on a hillside overlooking the great expanse of the former location of Andrew Carnegie's Homestead Steel Works along the Monongahela River.

Our Mission:

The mission of the Carnegie Library of Homestead is to inspire the mind, enhance the body, and bring delight to the spirit of our community.