

Tech Advisory Meeting – 4/15/06

Present: Laurie Louis(APL), Marcia Middleton(APL), Lorraine Smi(VOOR), Rawdon Cheng(UHLS), John Love(BETH), Joe Mikowiec(BRUN), Mike Whitney(EGRN), Jeff Clesceri (Presenter)

Presentation of East Greenbush Community Library WLAN by Jeff Clesceri
Wireless access for public laptops is provided using the PublicIP wireless management software (<http://publicip.net/>) on an old PC used for a PublicIP gateway server. EGR is using the free service, which runs on the company's development server. Paid service with added features and support is also available. Minimal hardware specifications for the gateway and a comparison of program features are included on the documentation provided at the demonstration.

After clicking in system tray to scan for available wireless networks, the user is taken to a login page for authentication. There is no encryption.

Username: library

Password: Library__ (digits correspond to Monday date each week)

EGR runs the service in closed mode with all users denied access to wired LAN. Publicip.net on-line interface provides functionality – can set user limits by time or bandwidth. BETH has tested this in open mode, where a policy page is the first thing a user sees when they access wireless service at the library. The on-line interface also provides usage reports tracking via mac address on bandwidth used etc.

EGR has support notes at the Reference desk for staff and an FAQ for patrons. Mike Whitney states that so far the service has not required intensive staff support.

John Love mentioned a network security site he saw presented at a conference. www.networksecuritytoolkit.org It contains many tools and documentation for cracking and network sniffing, etc. Brief discussion of wireless encryption. WEP v. WPA, WPA is more secure encryption.

Marcia Middleton showed new APL website, described various features.

Brief discussion of replacing Gates PCs and alternatives for Children's software. Mike is considering using CD/DVD emulator www.alcohol-soft.com/ BETH is using an emulator from www.farstone.com APL has evaluated the software as well.

Brief discussion of public access web development software, what is out there, what level of functionality. Netscape has a product. SUNY uses Html kit.

Next meeting: Wed., May 17th at UHLS, 9:30 a.m.

East Greenbush Community Library

WLAN Information

Our system is configured using the PublicIP wireless management software, distributed for free under the GNU General Public License and built using the Morphix Live CD Linux distribution. More information is available at <http://publicip.net/>.

Any old PC can be used for a PublicIP gateway server. The minimum recommended specs and required hardware are:

- Any WiFi compliant wireless router or access point
- Standard router for Internet connection/firewall
- Computer with:
 - a. An Intel-compatible CPU (~600 MHz or greater)
 - b. Minimum 128 MB RAM. (>384 MB Rec. for minimal CD reads)
 - c. Bootable CD-ROM drive.
 - d. Floppy drive or USB thumb drive
 - e. 2 Network Interface Cards (NIC's)
- High-speed Internet connection
- Login Account for Control Server

We use a Linksys WRT54GS v4.0 due to its Linux based OS and compatibility with many 3rd party firmware packages. We use DD-WRT - <http://www.dd-wrt.com/>, which also runs on popular models from ASUS, Buffalo Technology, Linksys, Motorola, and Siemens.

Find out more about extending the capabilities of consumer-level routers at <http://www.linksysinfo.org/>

There are several different levels of account privileges that can be assigned to the end-users of the system. They can be restricted from any access to your wired LAN, assigned bandwidth usage (cumulative MB per day) and connection lifespan (# of minutes per day) quotas. You can customize outbound port restrictions however you like (i.e., allow nothing other than 80, 443, 53...or conversely, allow anything except 25, 1433, or whatever). You can also configure a Super User account for admin use with no restrictions, anything goes. All of this functionality is available under the PublicIP free system.

The paid version (between \$8-16 a month) does offer some feature extension, as well as end-user support. The greatest benefit may be high availability due to redundant dedicated servers, while the free service runs on an individual server that is classified as

a “development” server. This translates into system outages that may be frequent or few and far between, depending on what the developers are doing. The free system has a forum where the founder has expressed that he will be rebuilding the free server shortly, whether this means the service will be more reliable, they cannot say for sure. A breakdown of the comparison between the free service and various paid levels follows:

	FreeNet	Basic	Custom	On Spot	Premium
Captive Portal	X	X	X	X	X
Content Filtering	X	X	X	X	X
User Classes	X	X	X	X	X
Bandwidth Throttling	X	X	X	X	X
Usage Limits	X	X	X	X	X
Open/Close Hours	X	X	X	X	X
Walled Garden	X	X	X	X	X
Un-Authenticated Access	X	X	X	X	X
Firewall	X	X	X	X	X
Usage Report	X	X	X	X	X
Block P2P Software		X	X	X	X
Registration Filters		X	X	X	X
Configure DHCPd		X	X	X	X
Remote Restart/Reboot		X	X	X	X
Content Filter Report		X	X	X	X
Content Filter Interface		X	X	X	X
Blocked User Report		X	X	X	X
Ticket System		X	X	X	X
Availability Hours		X	X	X	X
Spot Check		X	X	X	X
High Availability		X	X	X	X
Custom Support Emails		X	X	X	X
Hotspot Directory		X	X	X	X
End User FAQ		X	X	X	X
Templates		X	X	X	X
Change Eth1 IP		X	X	X	X
Add LAN Printer		X	X	X	X
Use Remote Proxy		X	X	X	X
Remote SMTP		X	X	X	X
Configuration Queue		X	X	X	X

Encrypted Downloads		X	X	X	X
Live End-User Support				X	X
Customize Templates			X		X

The topology of the system is roughed out in the Viso handout, the specifics are:

- The “WAN” (eth0) side of the ZoneCD box is configured with a static IP address in your LAN’s non-DHCP assigned range so the command line interface can be SSL’d (password-protected) from a LAN-based PC running Putty or the like.
- The WiFi device (wireless router or access point) is connected via a LAN port (not WAN port) to the 2nd NIC on the ZoneCD box (eth1), which ZoneCD configures to a default of 10.10.10.1. DHCP is shut off on the WiFi device, as all DHCP is served by the ZoneCD machine to all wireless clients. The LAN port IP on the WiFi device is statically configured (usually 10.10.10.2) for admin access to the device’s configuration interface.
- There is no WEP/WPA/WPA2 encryption enforced on the wireless signal. This is in alignment with the standard at most public hotspots. The client connects to the available network (SSID advertised), and opens their internet browser. The ZoneCD system forward unauthenticated MAC addresses to a captive portal, which you can brand with a picture as well as custom text. The patron logs on using the credentials you have provided to the account with the privilege of your choosing.
- A small popup window will open that keeps their session with the server alive. If you have enforced a bandwidth or lifespan restriction on their account, their usage will be tracked and updated in this window. This window has a “logout” button that the patron can click when they are done, or they can just close the window.

Depending on what you choose to invest in terms of time or \$, the system can be basic and “close to” free, or have a very deep feature set with a high level of branding and customization for a reasonable cost (variable cost of \$85-\$175 a year).

In either case, the fixed up front cost usually amounts to the cost of the WiFi device, as the server software can be run on such a modest platform that a candidate machine can usually be obtained for free or negligible cost.

P.S. – For the hardware geeks out there (like myself) some cool hardware upgrades are available, like this solid-state hard drive that is pre-flashed with the ZoneCD software, and plugs directly into the IDE port on your server’s motherboard.

