The Open Pitt

What's cooking in Linux and Open Source in Western Pennsylvania

Wireless Tunes *by Drew Celley*

I've heard it said that one in ten Americans has an MP3 player of some sort. That's a pretty big number, though I'm not one of them. Why wouldn't I have an MP3 player? I built my own portable radio station instead.

I was inspired by a *Wired* article about the Radio Re-Volt project at the Walker Art Center in Minneapolis `<http://projects.walkerart.org/radio/>` where people are creating their own radio stations using tiny inexpensive transmitters and a little creativity. The FCC is quite prohibitive when it comes to broadcasting in commercial airspace, so while I will skip over the free-speech activism issue, I suggest everyone do a quick bit of reading through their message boards, understand the issues, and and read what other bloggers have to say about it before powering up your transmitter.

After reading the above and doing a little bit of research, I found instructions at Jiggybyte on how to hack a popular MP3 player accessory, the Belkin Tunecast II FM transmitter `<http://www.jiggybyte.com/tunecast.htm>`. I went promptly to EBay and bought a used one for under $20. When it arrived, I immediately cracked it open, cut out the antenna wire, and soldered a full wavelength-long piece of wire onto the thing (about 9 1/2 feet), using the instructions from Jiggybyte as a guide.

I had to scan the dial with a couple of radios to find a quiet spot on the FM dial which would let me hear it clearly enough. The Tunecast is most useful in this scenario, because it lets you choose the transmission frequency across the range of 88-108 Mhz. Most little FM jobs for MP3 players do one of 4 stations, and they don't have a backlit LCD display.

After all this, I plugged the Tunecast into my laptop and fired up my favorite player. It just plays, and the Tunecast converts the audio signal from the headphone jack into an FM radio signal. From there, I use a $4 FM radio and a pair of headphones and can navigate up to about 50 feet away without too much interference.

If you're interested in simulating a real radio station, take a look at `<http://ross.sourceforge.net/>`. It's got lots of good links and discussion about open source software for radio automation and related topics. I am kind of excited about using Festival's text-to-speech synthesizer for RSS feeds between songs, à la `<http://geekradio.sourceforge.net/>`.

Lucky for me, nobody knows my tiny $4 FM radio isn't an MP3 player, and I think I like it that way.

Drew Celley lives on the South Side and runs `wifimaps.com` *and* `pghwireless.net`*. He has written for O'Reilly and Associates and other publications.*

January Roundup

Jan. 15 General User Meeting: **Ryan Brown** of **The Burgh Live** spoke about User Mode Linux (UML). UML is "Linux on Linux"—it allows you to run multiple guest instances of the Linux kernel as if they were ordinary userspace programs. This can be useful if you are doing kernel development; a crash will take down the guest, but not the whole machine. Or you can divide a large server into virtual hosts and safely give customers root access to the guests. Ryan covered issues like selecting a root filesystem, networking, and utilities for administration.

The Burgh Live - `<http://www.tblive.com/>`

Hot Off the Grill...

Recent software releases **Debian GNU/Linux 3.0 revision 4** was released on January 1. This update adds security and bug fixes to the stable "woody" series.

Mandrakesoft announced on January 4 the availability of two new products: **Corporate Desktop 3.0** and **Corporate Server 3.0**. Featuring the 2.6 Linux kernel and a 5-year support lifetime, they are intended to compete in the marketplace with the major enterprise distributions.

The FreeBSD Project released **FreeBSD 4.11** for i386 and Alpha architectures on January 25. It is moving to "Errata Branch" status with only well-tested fixes to be distributed hereafter. New development has been shifted to the 5.x branch.

Despite his recent illness, Patrick Volkerding put out **Slackware 10.1** on February 2. It includes the latest versions of X11R6 and KDE and fully supports both the 2.4.29 and 2.6.10 kernels.

Coming Events

The public is welcome at all events

Linux in All the Unusual Places

It's no secret that most desktop PCs are capable of running Linux. Here we review some other places it's being used—or can be made to run.

IBM

In late 2000, IBM made big headlines by announcing a billion-dollar investment in Linux development. They followed this up by supporting Linux across all their server lines, up to and including zSeries mainframes. Now IBM is offering two Linux-only servers: the OpenPower 710 and 720. Based on IBM's POWER5 processors and starting at under $5,000, these are squarely aimed at the small and medium business market. Your choice of SUSE LINUX Enterprise Server or Red Hat Enterprise Linux can be preloaded.

Silicon Graphics

SGI has put a great amount of effort into its high-performance Altix line, shipped standard with Linux. The Altix features a NUMA (non-uniform memory access) architecture where each processor has memory that is local to it, but still available to other CPUs. This falls somewhere in between an SMP (symmetric multiprocessing) machine where all CPUs share a common memory pool and a Beowulf cluster, where each node has its own separate memory. The Altix is geared towards scientific computing applications. WPLUGers had the opportunity to see an Altix 350 when Michael Skowvron brought one to show off at the January meeting.

Hewlett-Packard

HP is still struggling to find its way and work out its product lines after merging with Compaq. Last autumn saw HP dip its toes into the Linux pool with the release of the $1,200 nx5000 laptop running SUSE 9.1. All the hardware features are supported, though the modem, wireless card, and DVD playback require proprietary software to operate.

Laptops, Laptops, Laptops

If HP's limited offering doesn't satisfy you, here are three other sources for your mobile Linux fix: Linare, Linux Certified, and EmperorLinux. They sell either whitebox laptops with Linux newly installed, or name-brand laptops which have had that other operating system replaced with Linux. The founder of EmperorLinux boasts a collection of thousands of "Designed for Microsoft Windows" stickers, each one ripped from a laptop he's rescued. <http://www.linare.com/> <http://www.linuxcertified.com/> <http://www.emperorlinux.com/>

TiVo

Only a small percentage of the hundreds of thousands of TiVo owners know—or care—that the box on top of their television set has a customized Linux distribution under the hood. All they know is that it works. But there are always those who don't believe in leaving well enough alone, and they've set up sites like <http://www.tivofaq.com/hack/>, <http://www.tivocommunity.com/>, and <http://tivo.samba.org/> to share their hacks. Perhaps the most common is to increase a TiVo's capacity with a larger hard drive, but you can also run arbitrary Linux binaries.

Linksys

Like the TiVo, the user interface presented by the Linksys WRT54G wireless router doesn't betray the fact that it's running Linux. While its limited processing power and memory mean that you won't be using it for serious number-crunching, it is perfect for running lightweight services you want to be visible on your network. A wealth of information is available at <http://www.seattlewireless.net/index.cgi/LinksysWrt54g>. Sveasoft sells drop-in replacement firmware at <http://www.sveasoft.com/>.

Macintosh

It may be a surprise to learn that you can buy a Mac with Linux pre-installed—and Apple doesn't even

What is Linux?
Linux is a *kernel*, the core of a computer operating system, created by Linus Torvalds. It is typically packaged as a *distribution*, which includes the extra programs necessary to make a computer functional and useful. Since 1991, it has grown from a one-man project which ran on one computer to one with thousands of contributors running on everything from personal organizers to million-dollar supercomputers.

What are Open Source and Free Software?
Open Source and Free Software provide you, the user, with the opportunity to see the source code of the programs you use. You are free to use it, share it with others, and even make changes to it if you wish. While the Free Software and Open Source communities differ in their philosophical approach, in practical terms they share nearly identical goals. Learn more at <http://www.opensource.org/> and <http://www.gnu.org/>.

This newsletter was produced using Open Source and Free Software.

mind. Terra Soft Solutions offers its newly-released Yellow Dog Linux 4.0.1 distribution dual-booting with Mac OS X on the iMac, Power Mac, iBook, PowerBook, Xserve, and even the new Mac mini! <http://www.terrasoftsolutions.com/>

iPod

When first released, the iPod only worked with Mac machines, and now has Windows support. Of course Linux hackers couldn't stand being left out, and have developed programs like GNUpod and GTKpod to talk to the devices.

But some saw an even bigger challenge: getting the iPod *itself* to run Linux. Compiled for the iPod's ARM processor, applications available for iPodLinux include chess, Tetris, Asteroids, and oh—it plays music, too. <http://www.ipodlinux.org/>