

MUUGLines

The Manitoba UNIX User Group Newsletter

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Next Meeting: April 14th, 2009

Xubuntu on a Mini-ITX Single-Board System

Single-board PC's are becoming increasingly small, cheap and plentiful. The Mini-ITX motherboard offers almost everything you need to set up a basic system running a scaled-down or full-featured Linux distribution. Just add an enclosure, power supply and disk, and you're good to go. But there may be a few "gotchas" along the way.



In this interactive demo presentation, Scott Balneaves, from Legal Aid Manitoba, will bring a few surplus **Epia 5000** Mini-ITX motherboards along. In his demo, he plans to do the following:

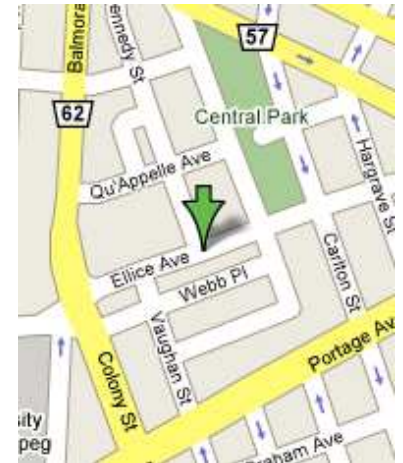
- Step through the mobo's features, identifying pin outs for headers, etc.
- Install a mobo in a case, demonstrating connecting PSU, disk, cdrom, etc.
- Install **Xubuntu** on the system.

Where to find the Meeting

Meetings are held at the IBM offices at 400 Ellice Ave. (between Edmonton and Kennedy). When you arrive, you will have to sign in at the reception desk, and then wait for someone to take you (in groups) to

the meeting room. Please try to arrive by about 7:15pm, so the meeting can start promptly at 7:30pm. Don't be late, or you may not get in. (But don't come too early either, since security may not be there to let you in before 7:15 or so.) Non-members are welcome, but may be required to show photo ID at the security desk.

Limited parking is available for free on the street, either on Ellice Ave. or on some of the intersecting streets. Indoor parking is also available nearby, at Portage Place, for \$3.00 for the evening. Bicycle parking is available in a bike rack under video surveillance located behind the building on Webb Place.



BSDTalk 170 – Marshall Kirk McKusick @ DCBSDCon

In this episode of BSD Talk, a recording of the legendary Mr McKusick giving a narrative history of BSD. Having been with the project since the inception at Berkley he has a fascinating tale from an equally fascinating point of view. This episode clocks in at 55min and can be downloading from his site or this direct link:

- <http://bit.ly/2jR94q>

If you are not familiar with it, the BSD Talk podcast is one that highlights and interviews members and projects in the BSD community. The podcast is produced by William Backman and is now 171 episodes strong. You can find it at:

- <http://bsdtalk.blogspot.com>

OpenBSD turns 4.5

OpenBSD 4.5 goes live on May 1st, 2009. The most notable editions for this release are the initial ports to the Xscale based gumstix and ARM based OpenMoko platforms. More support has been added for logical domains on some of Sun's more ambitious hardware (namely the CoolThreads based servers). Amongst many driver and package updates, there are significant performance enhancements to the PF packet filter. If you are impatient, the OPENBSD_4_5 CVS tag is currently active.



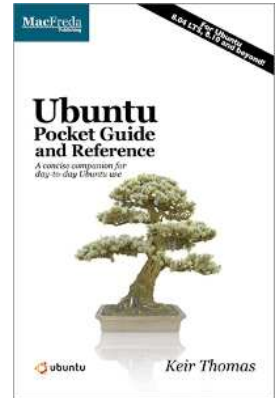
Arduino Mega: Bigger, More Powerful, Still Blue.

The Atmel ATmega-based Arduino boards are quickly becoming the most popular hobby boards for embedded development. Based on the ATmega system-on-a-chip platform and the packaged IDE, the Arduino is easy to get into despite the constrained proportions of the Atmega chip. If you've done development on the AVR butterfly (a really neat board), the Arduino makes that task far easier with built-in USB to serial chipset and IDE based tool chain. This newest update upgrades the processor to the AT-Mega1280, which doubles RAM to 8K and 128K of flash. More specific details can be obtained from the Arduino blog's announcement:

- <http://arduino.cc/blog/?p=229>

Ten Free and Downloadable Open Source Books

Alastair Otter's most recent blog post goes over ten books on Linux and Open Source which are freely available to anyone that can click a download button. Given the recent interest in 'newbie' training, this is a great resource to hand to folks new to the Linux environment. Of particular interest is the Linux Starter Pack (by Linux Format magazine) and the Ubuntu Pocket Guide and Reference by Keir Thomas.

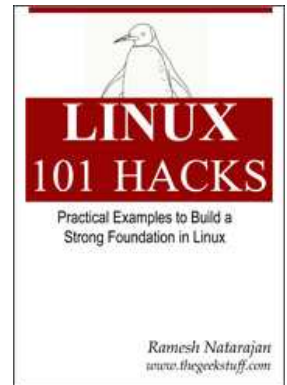


For the entire list and links to these books, visit Alastair's blog post on the topic:

- <http://www.tectonic.co.za/?p=4491>

More Free Books...

The Geek Stuff also reports a free book called *Linux 101 Hacks*. Containing 101 hack in 12 chapters and 140 pages, the book is a great overview of important Linux commands for end-users and system administrators alike.



- <http://www.thegeekstuff.com/2009/02/linux-101-hacks-download-free-ebook/>

In addition to the above, you might also want to check out the wealth of free guides and howto's, on a variety of topics and aimed at various levels of user experience, available from the Linux Documentation Project web site:

- <http://tldp.org/guides.html>

Version Control: Paralyzed By Choice

If you've written any code, you undoubtedly have experienced the 'but it worked just before this last edit... now what did I change?' Unless every compile or instantiation is prepended by an automatic backup of the previous edit, this problem will plague you. Fortunately this problem was mitigated long ago by means of 'version control systems.' Now you might be thinking 'but I don't write code, so why do I need such malarky?' Well version control is designed to maintain the state of an object over its editable life cycle. Documents can be text files, software code, web pages, to-do lists etc. Even if you are not collaborating on documents, version control can save you hours of productivity. OpenOffice and MS Office have built-in version control for documents (which is a popular forensic tool, since many people forget to strip that from documents before publishing).

So which tool do you use? It seems like every day there is a new version control tool for some new niche task. The products in the top spot are the old stand-by CVS (which uses RCS and diff under the hood), Subversion and Git. If you are doing a lot of offline collaboration, there are tools for you too such as Mercurial, SVK (built on top of Subversion) and Bazaar. Choosing the right tool for the job at hand is an admirable goal though the initial investment in learning and adapting your workflow to that particular version control tool's style.

There really is no 'one true' package, so if you are writing code and like a particular IDE, then look at the available plugins or default supported versioning tools. For instance CVS and Subversion are supported in Eclipse and Xcode. If your IDE of choice is VI/Emacs/Pico/TextEdit.app/notepad.exe & Make, then you can shoe horn any tool in.

If you've ever found yourself asking yourself what changes did I make lately... then definitely check out a few of the above mentioned tools. Subversion is very easy to get into and CVS is the old curmudgeon that is still relevant (but not exactly intuitive); and if you want to use what Linus and the Linux kernel

team use, then look into Git. Either way, getting into version control is time well spent, and, in the best cases, time saved.

Clever Hack to Handle Bad RAM

Sometimes computers fail in the strangest, unpredictable ways and seemingly at random. Despite your best efforts at patching, reinstalling OS's and software, the system just refuses to work consistently. In this case, we have to start suspecting hardware, and RAM is increasingly becoming a part that fails more frequently. There are tools to scrub and test RAM such as memtest86+ (<http://memtest.org/>), but what can you do if you find your RAM is faulty. Well if you are lucky to have a brand that has a lifetime warranty, you can return it. If you cannot, you have two options: Buy new RAM or map your kernel around the bad cells. You can do this by adding an option to the kernel boot parameters in your boot loader. An individual who calls himself 'gQuig' wrote about how to accomplish this on his blog:

- <http://bitly.com/GG0Ev>

Please note that this is just a temporary work-around, as failed cells can cascade, so this clever trick buys you the time to source some replacement RAM.

Hard Drives Die... Might As Well Monitor Them

There is one thing for certain. Spinning disks fail and usually at the least opportune time. A spinning disk can live as long as 5 to 10 years and will keep running as long as the motor still functions. One thing about spinning motors is that turning them on and off again frequently hastens their demise, as does prolonged overheating. If you leave your drives spinning all the time, you will probably not notice the drive is dying until that fateful date you have to reboot it and the drive motor spins down one last time.

There is something you can do to detect these problems before they occur. Almost all drives these days support a protocol called SMART. Regardless of the

inter-connect (IDE, SCSI, FCAL, etc.), the drive's firmware most likely supports device monitoring, but odds are you are not watching those values. Many recent motherboards will probe SMART values on boot, but that doesn't help you if you leave the machine on all the time. For instance, even Windows doesn't monitor a drive's health out of the box.

Luckily there are tools to help you, but you'll need to install them and set them up to periodically test and report on disk health.

In OpenBSD, there is a nice tool called 'atactl' which will probe ATA based disks, and there is a nice article on how to use it:

- <http://bit.ly/gipm>

A more platform-neutral and flexible tool is named smartmontools, which has been ported to many of the modern OS's and has a probing tool and a monitoring daemon in one nice easy to configure package.

The following nice article will help get you started in Linux:

- <http://bit.ly/YBE7i>

Easy Web Filtering with OpenDNS

Since almost every small business finds itself online these days, a common question is how a boss can block various websites for various and sundry reasons. Most of the time, the infrastructure available is a commodity router attached to a residential cable or DSL service. The other option is to setup filtering and proxy services on a machine that has to be maintained. While that is the 'cooler' option, most small business see computing as a service, not as an infrastructure they need to maintain. On the technical end, setting up DNS black holes or Squid filters are on the surface easy to setup but notoriously difficult to setup correctly and actively maintain.

There is another option though: instead of using your up-stream's DNS servers, you can grab a free account and use the OpenDNS projects' NS servers. One of

the neat features of OpenDNS is that it maintains groups of sites that it will filter for you, such as various social networking or file sharing sites. Using OpenDNS also offers bot-net protection, which essentially blocks access of infected hosts on your network from connecting to known bot-net controller hosts.

If you are interested in learning more about how to use OpenDNS, Mike Diehl from Linux Journal has a nice article you can use to get started:

- <http://bit.ly/AY9IE>

OpenDNS isn't a perfect security tool, but one tip to make it harder to abuse is to block all DNS traffic, leaving your network that doesn't go to the two OpenDNS web servers. This ensures that the easiest loophole for this technique is mitigated.

Sending Us E-Mail?

Due to the amount of e-mail MUUG receives, we've set up an auto-reply to give you immediate feedback, and redirect some of the e-mail to the appropriate places. Why not look at <http://www.muug.mb.ca/about.html#contacts> first?

Share Your Thoughts

E-mail us with your comments on the newsletter, whether it's criticisms or commendations, and continue to send in articles or ideas for the same. Specifically, what sort of material you would rather see: Announcements, technical articles, new products, or...?

If you have a How-To or other idea, and aren't ready to give a presentation at MUUG, an article is a great alternative! If you can write better than the editor, that's terrific; if you can't, submit it anyway and we'll get it into shape for publication. We know that many of you have some great ideas and lots of knowledge. Why not share? Send Mail to: editor@muug.mb.ca.

