# MUUGLines

## The Manitoba UNIX User Group Newsletter

## Next Meeting: January 10th, 2012

This month's meeting will have the usual RTFM with two mini-topics.

### RTFM: cron & crontab

January's RTFM is brought to you by the letter "c" and Michael Doob.

### Topic: VPN Tunnelling over SSH

Sean Cody will show us how he uses VPN tunnelling over SSH.

### Topic: VM Install of Ubuntu Server

Adam Thompson will demonstrate the installation of Linux as a Virtual Machine, and briefly discuss his experiences supporting various UNIXes in virtualized environments.

## Upcoming Meetings

### Date Change! February 21st, 2012 (Third Tuesday of the Month)

February's meeting will be on the 21st as the normal date falls on February 14th.

## Topics?

Your board has been coming up with a great variety of presentation topics for years. Have we missed something that you'd like to know more about? Just let any board member know, and we'll put it in the queue. Contact us at <**board@muug.mb.ca**>.

## Where to Find the Meeting
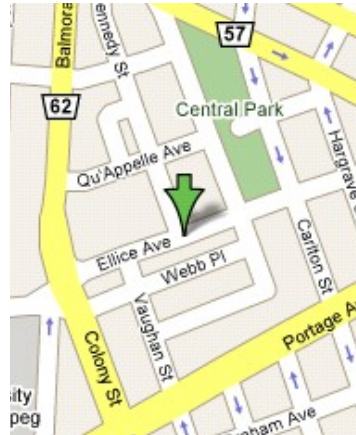


Meetings are held at the IBM offices at 400 Ellice Ave. (between Edmonton and Kennedy Streets). When you arrive, you will have to sign in at the reception desk. Please try to arrive by about 7:15pm, so the meeting can start promptly at 7:30pm.

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 $5.00 for the evening. Bicycle parking is available in a bike rack under video surveillance located behind the building on Webb Place.

## The Coming War on General Computation

Most of us have heard arguments on DRM countless times, but Cory Doctorow makes an interesting point in how pro-DRM organizations are making a shift in the types of computing appliances we have. Check out the video link or the transcript from the 28c3 convention in December:

**http://www.youtube.com/watch?v=HUEvRyemKSg**

**https://github.com/jwise/28c3-doctorow/blob/master/transcript.md**

## IBM Demos Racetrack Memory, a Candidate for "Universal Memory"

This new type of memory is based spin currents to directly manipulate the magnetic state of nano-scale magnetic regions within magnetic nano-wires. This device (dubbed race-track) is a solid state memory with a density similar to that of conventional disk drives, but with a much higher read/write performance.

Racetrack memory uses a spin-coherent electric current to move magnetic domains along a nanoscopic permalloy wire. As current is passed through the wire, the domains pass by magnetic read/write heads positioned near the wire, which alter the domains to record patterns of bits. Racetrack is made up of many  of these wires and read/write elements.

In general concept, racetrack memory is similar to the earlier twistor memory or bubble memory of the 1960s and 1970s.  Like bubble memory, racetrack memory uses electrical currents to "push" a magnetic pattern through a substrate. Drastic improvements in sensing materials and devices now allow the use of much smaller magnetic domains to provide far higher densities.

A simple implementation was unveiled in 2008, but recently a prototype chip consisting of 256 Racetrack cells was shown.  Each cell consisted of a single magnetic nanowire, 60-240 nanometres wide and 15-20 nanometres thick.

**http://www.bbc.co.uk/news/technology-16047098**

# Recent Improvements to ext4

### Bigalloc

4KB block sizes were still standard with ext3, but drives are pretty large these days.  bigalloc helps pare down the number of blocks.  As of the 3.2 kernel, bigalloc will add the capability of "block clusters" to the filesystem.  Rather than allocate single blocks, a filesystem using clusters will allocate them in larger groups. Mapping between these larger blocks and the 4KB blocks seen by the core kernel is handled entirely within the filesystem.

When creating the filesystem, use *e2fsprogs* to set the cluster size (it must be a power of two).

Using bigalloc on drives where the files are larger sizes should result in better performance.  Block allocation times and fragmentation statistics will improve.

### Inline Data

Very small files can be stored directly in the space between inodes without the need to allocate a separate data block.  There is often wasted space in this area, so may as use it.  Inline data would result in a drop of about 1% for the kernel tree, and /usr will get about 3% smaller.  The inline data idea is still being hammered out, so don't expect to see it for another couple kernel versions.

### Metadata Checksums

ext4 lacks checksums to data and metadata, so why not improve it?  Checksums are calculated based on the various data structures found on an ext4 filesystem - superblocks, bitmaps, inodes, directory indexes, extent trees.  A checksum failure can cause the filesystem to fail to mount or, if it happens on a mounted filesystem, remount it read-only and voice its panic in the system log.

The task of developing checksums for the data itself would require a larger overhaul, so there has not been much word on that yet.

Affected modules will be e2fsprogs, e2fsck, mke2fs and tune2fs.  Note *metadata checksums* is a work-in-progress as well; it's not ready for inclusion, but it should be close.

**http://lwn.net/Articles/469805/**

## Experimental Editions of Sabayon Available with New Desktops

Sabayon (a distribution built on top of Gentoo Linux), recently announced three new experimental editions that supplement their previous GNOME, KDE, Xfce, and Core releases. The experimental editions - LXDE, E17 /Enlightenment, and *awesome* - are X-Window based and are meant to be lightweight.

A reviewer at **lwn** describes *awesome* (a fork of *dwn*) as a "[customizable] window manager that gets out of the way", suitable for power-users.

Check out the lwn link for direct links to users' config files, themes and widgets.

**http://www.sabayon.org/release/press-release-sabayon-linux-7-experimental-releases**

**http://lwn.net/Articles/467559/**

## Razor-qt: A Fast Qt Desktop Environment

IconGtk+ has GNOME and Xfce. Qt, on the other hand, only has KDE; there's no lightweight alternative if you want a Qt desktop. Not anymore: Razor-qt is a small, lightweight and simple Qt desktop environment suitable for those with less-powerful machines or people who like the minimalism, on principle.

Razor-qt is not an entire desktop environment like KDE and GNOME. The Razor-qt developers prefer Openbox (free Window manager for the X-Window system), but it can work with everything else (Kwin, fvwm...). For the rest, Razor-qt consists of modules you can mix and match to suit your needs.

**http://www.osnews.com/story/25448/Razor-qt_A_Fast_Qt_Desktop_Environment**

## Android Drivers Introduced Back Into the Kernel

Kernel maintainer Greg Kroah-Hartman has put the Android drivers back into his development branch for version 3.3.

The plan is for the kernel to be able to boot on an Android device without further patches. The caveat is not all Android patches are being automatically carried over to the main development branch. (e.x. battery-saving code WakeLock is not being included because it's not needed for the device to boot).

**http://h-online.com/-1400996**

## Year in Review: Top Tech-Related Stories 2011

### Sony PlayStation Network Hack and the Rise of "Hacktivism"

In April, service was out for millions of users for two months, and millions of subscribers' personal data was compromised. The attacks were partly in retaliation against Sony's response to the release of code for its PS3 console that let the device run unauthorized software.

### ICANN Hands Out Last IPv4 Addresses

ICANN handed out the final five blocks of 16 million addresses to each of five regional Internet registries.

### Apple Sues Samsung

The lawsuit focused patents for list-scrolling software and three smartphone and tablet design patents related to the Android software.

### Stop Online Piracy Act

Introduced in October, this act gives U.S. law enforcement and copyright holders the ability to obtain court orders to stop search engines, payment processors, and other entities from doing business with websites accused of enabling copyright infringement (alleged infringement).

### Steven Jobs Passes Away, October 5th.

### Egypt Goes Offline

On Jan. 28, Internet routes connecting Egypt to the rest of world vanished from sight. Egyptian service providers, under pressure from a government besieged by political protest, had cut connectivity to the Internet. Mobile telecommunications were also affected.

**http://www.infoworld.com/d/the-industry-standard/tech-stories-2011-jobs-android-and-anonymous-rank-in-top-10-181621?page=0,0**

## GoDaddy Gets Coal for Christmas

December 22 - it was revealed GoDaddy actively supported the Stop Online Piracy Act (SOPA) to a degree many disagreed with (including being responsible for some of its creation).

December 23 – Go Daddy rescinds its support for SOPA.

What happened from one day to the next? In very short timeline, a boycott was verbalized on reddit, which was picked up all over the web.

Those who jumped ship or are planning to jump ship from GoDaddy include

- OSNews (including 30 related domains),

- Wikimedia (including Wikipedia, Wikibooks, Wikisource, Wikiquote, and Wiktionary),

- Cheezburger (including a reported 1000+ other domains he also owns)

and an unknown number of others who also decided to jump ship when they noticed the flames (pun not originally intended).

Paul Graham, YCombinator founder and investor (a venture capital firm who helped start-ups such as reddit, Dropbox, and Scribd), took it a step further. Ycombinator banned employees who work for a company on the official list of SOPA supporters from attending the YC Demo Day.

Notable industry opponents of SOPA include Google, Yahoo!, Facebook, Twitter, DynDNS, AOL, LinkedIn, eBay, Mozilla Corporation, the Wikimedia Foundation, Reporters Without Borders, the Electronic Frontier Foundation, the American Civil Liberties Union, and Human Rights Watch.

**http://arstechnica.com/tech-policy/news/2011/12/godaddy-faces-december-29-boycott-over-sopa-support.ars**

## EU Opens Antitrust Probe of Apple and E-Book Publishers

The European Commission has announced that it has opened a formal antitrust investigation into whether major book publishers colluded on the sale of e-books.

Publishers named in the investigation include Hachette Livre, Harper Collins, Simon & Schuster, Pearson Group, and Macmillan.

The EU announcement comes about four months after a United States law firm filed a class action lawsuit against Apple and several major publishers, accusing them of colluding to increase e-book pricing and forcing Amazon to ditch e-book discounts.

Earlier this year, Apple introduced a subscription billing platform for the App Store, under which it takes a 30 percent cut of revenues. That prompted Amazon and other e-book providers to pull support for e-book purchases from their iOS apps in order to avoid losing 30 percent. Kindle and Nook e-book purchases are now handled via the browser on Apple devices.

**http://www.pcmag.com/article2/0,2817,2397266,00.asp**

## Sending Us E-Mail?

Due to the amount of e-mail MUUG receives, we've set up an auto-reply to give you jaunty feedback, and redirect some of the e-mail to the appropriate places. Why not look here first?...

**http://www.muug.mb.ca/about.html#contacts**