

MUUGLines

The Manitoba UNIX User Group Newsletter

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Next Meeting: December 14th, 2010

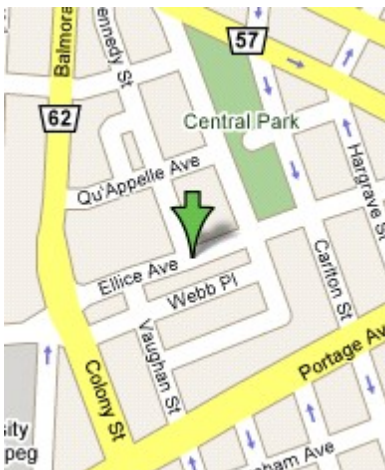
Topic: Round-table, Mingling & Munchies

As the holiday hustle and bustle gets into high gear, we'll take it easy this month, with a longer-than-usual round-table session (if there's a need for it), followed by a time for mingling and nibbling on munchies (instead of the usual, short coffee break).

Door Prize and Food Bank Donation

There will also be a door-prize draw at the end of the December meeting, but instead of our usual free draw this month, we ask that you bring a tin or other non-perishable food item for Winnipeg Harvest. You'll get one draw ticket for each item you bring to donate. There are 4 books to be drawn, but each entrant is eligible to win only one prize. So, please be generous, and you might just take home a cool book from O'Reilly!

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.

Upcoming Meetings

January 9th, 2011

Michael Doob will speak on KVM and QEMU.

Stepping Away from X

Red Hat has announced that their Fedora distribution will soon be shipping with the Wayland OpenGL-based display management system. They see Wayland as a likely replacement for the X Window System. Adam Jackson wrote on Fedora's development list that Wayland will probably be shipped with Fedora 15, due out next spring.

Canonical, the organization that leads the Ubuntu project, has already signalled their intentions that Ubuntu will move to Wayland. Mark Shuttleworth said that they are looking towards Wayland to get performance improvements they couldn't easily get from X. They expect developers will build Wayland clients that will implement network protocols (including, for example, imbedded X servers) that will provide the functions that X currently offers.

One advantage that X offers is network transparency; the X server doesn't care whether the client programs that connect to X are on the same host computer or on another host on a network. The proposed replacements generally drop network transparency.

Graphic displays are far more complex than they were 25 years ago when X was introduced. Some developers find that X gets in their way when they try to use the features of modern graphics cards. They prefer graphics systems that aren't as general-purpose as X, but provide better performance.

Tweaking the Linux Scheduler

A new patch to the Linux kernel seems to dramatically improve the responsiveness of the Linux desktop when the system gets busy. Often, users find that the desktop user interface does not respond quickly when CPU intensive jobs are running in the background. With this patch, the desktop is still smooth and responsive to the user when big jobs are running in the background.

Mark Galbraith wrote this patch to the Linux scheduler. The patch is small – just over 200 lines long. It is designed to help the kernel automatically create task groups per TTY when the system has a heavy workload.

Proposed Changes to Internet Surveillance Laws

The Canadian government has proposed three bills (C-50, C-51, and C-52) that modify laws regarding surveillance of Internet communications. These changes are intended to help law enforcement officials investigate and prosecute unlawful activities on the Internet, with emphasis on current hot topics such as terrorism and child pornography.

Some observers feel that these new proposals are intruding excessively on personal privacy and freedoms. For example, the bills require that Internet providers give information about a customer's identity to law enforcement officials on request, even if the officials don't have a court warrant. Currently, Internet providers are only asked to provide this information voluntarily.

The proposed bills also require the Internet providers to build an infrastructure that will allow real-time surveillance of Internet traffic, and grant law enforcement real-time access to this surveillance data.

Zeven-OS

The ZevenOS team has released Version 3.0 of their Linux distribution. ZevenOS is based on Ubuntu 10.10, and boasts a BeOS-like user interface.

One of the biggest changes in this distribution is to replace the Nvidia open source driver **nv** with **nouveau**. They have updated their video encoding application, and replaced the default video player, music player, and image editing applications.

Narrowing Our Focus

Brian Whitman doesn't like music recommendation programs. He feels that they recommend music that is almost identical to the music that you already listen to; he believes that an important part of listening to music is discovering new aspects.

To underscore this approach, he wrote his own music recommendation program, and released it as part of the Boston Music Hack Day in October. His program, The Future Of Music 2010, scans the music files on your computer, determines your musical tastes, and permanently deletes all the music files that don't match your core musical tastes.

Whitman noted that when he ran this program on his own computer, the program promptly deleted the music performed by his brother's band. Whitman offered to run the program on his friends' computers, but they declined.

This program parallels concerns with the direction that Google is headed. Google is working on developing customized searches for each of their users. They record previous searches that each user performs, and modifies the current searches based on previous searches. Google feels that this will provide better customer service, because they more closely track the interests of their users. However, this means that their users may not see web pages that tend to contradict the users' general views.

Controlling Our Focus

The Canon Hack Development Kit is an open source package that allows you extensive control over the

operations of a number of models in Canon's Power Shot series of point-and-shoot digital cameras.

With this kit, you have complete control over the exposure settings of the camera. It will let you use the USB port for remote control of the camera. You can use motion detection to trigger a picture – this is so fast that you can capture flashes of lightning. You can also preset delays between motion detection and the triggering of an exposure, or set the camera to take pictures at intervals for time-lapse photography. (In an article for the IEEE Spectrum web site, David Schneider described how he attached his camera to a remote controlled model airplane and used the interval mechanism to shoot a series of aerial pictures.)

The software runs from the memory card of the camera, and doesn't permanently replace the firmware loaded on the internal camera memory – this means that you are unlikely to render your camera unusable by damaging the firmware. More information about this software is available at <http://chdk.wikia.com/wiki/CHDK>.

Pendulums and Genetic Algorithms

A program written at Cornell University has derived some laws of physics based on studying the motion of a pendulum.

Starting with basic algebraic operators and a dataset that described the motion of spring-loaded oscillators, simple pendulums and double pendulums, in less than a day the program derived equations that mirrored the law of conservation of momentum, and Newton's Second Law of Motion (force = mass x acceleration).

The researchers have indicated that this program could be used to analyze a number of dynamic systems to determine underlying rules of behaviour. Some of the fields they suggest are environmental systems, weather systems, and the human genome. They claim to have found some interesting laws when they have applied this program to studying the behaviour of cellular proteins, but have not yet published their results.

Linux Radio

Linux Radio offers an additional way for you to receive the kernel source files. The folks at that web site have assembled a number of audio files that have an electronic speech synthesized voice reading a source file from the Linux kernel. Each time you reload the page, you are given a different random audio file.

You can hear Linux Radio at <http://www.linux.fm>.

Attachmate Buys Novell

Novell announced this month that Attachmate will be purchasing Novell for US\$2.2 billion. Attachmate's traditional production line is software terminal emulation software and data transfer applications; its NetIQ suite focuses on enterprise system and security management software.

Novell will be retaining the copyrights and patents to Unix System V as it moves to Attachmate. However, it will be selling 882 patents for \$450 million to a consortium led by Microsoft.

Novell acquired SUSE Linux in 2003, and is a lead sponsor for openSUSE. It has also been working on developing cloud management services. Attachmate indicated that it will be splitting Novell and SUSE into two separate business units.

In September, the Wall Street Journal reported that VMWare was in talks to purchase the Linux side of Novell, with Attachmate purchasing the remaining part. The hedge fund Elliot Associates attempted to buy Novell earlier this year, but Novell refused the offer. Apparently, Elliot Associates is helping to fund this purchase – as part of the deal, Elliot Associates will become a shareholder in Attachmate.

Hacking Passwords with Cloud Computing

One of the configurations offered by the Amazon Elastic Cloud Computing (Amazon EC2) service is a Cluster GPU instance. This instance provides you

with two virtual Nvidia M2050 Graphical Processing Units.

Thomas Roth noted that GPUs are known to be effective hardware accelerators for cracking passwords. He timed how long it would take to crack passwords by running the CUDA-Multiforce script on this cloud computing instance. He found that he could crack all passwords from 1 to 6 characters long that were encrypted using the SHA1 algorithm in less than one hour. Amazon currently charges US\$2.10 per hour to use a Cluster GPU instance.

Critics have noted that passwords of 6 or less characters are known to be weak, and expanding the password to only 8 characters makes the brute force attack significantly harder. Many encryption routines also use salting techniques, which add a secret string to the end of passwords to strengthen weak passwords. Also, the SHA1 algorithm is known to be vulnerable to brute force attacks.

Still, cloud computing is providing people with impressive on-demand computing power for modest cost. The race between stronger encryption and faster cracking of encryption continues.

New Python Releases

The Python development group has announced the releases of Python 2.7.1 and Python 3.1.3.

The Python 2.7 update provides a number of features back-ported from 3.1, including a faster IO module, syntax additions, and dictionary views. It also has new features such as an ordered dictionary implementation, a new sysconfig module and unittests improvements. The Python 3.1.3 release focuses on bug fixes and documentation improvements, rather than new features.

Python 3.1 is not backwards compatible with Python 2.7. The Python development group supports both versions as current production branches.

In other Python news, PyPy Development Group released PyPy Version 1.4 at the end of November. This is a Python interpreter written in Python. Version 1.4 is the first version that is as fast as the default C

implementation of the interpreter, Cpython.

Holy Matryoshka, Batman!

The feedback section of the New Scientist magazine from August 28th had this note on nested acronyms:

Topping our examples of very deep multiple nesting of acronyms and initialisms (10 July), Henry Bainbride has come across a record-breaking five-deep example. The TEB is, it turns out, a TDIF Expansion Board, in which TDIF is the Tascam Digital Interconnect Format, in which TASCAM is TASC America Corporation, and TASC is TEAC Audio Systems Corporation and TEAC is the Tokyo Electro Acoustic Company. “It made my day,” Henry says. “It was very boring until then, as you can imagine.”

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>



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Build the skills.
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