MUUGLines

## The Manitoba UNIX User Group Newsletter

Next Meeting: April 12th, 2011

Topic: UNIX Certification – why bother?

Many UNIX® professionals come from unusual backgrounds: geology, mathematics, music performance, etc. Given the inward-looking nature of the UNIX job market, why bother getting certified when no-one cares about your education? Yet with over a dozen current designations available, *someone* must be taking these courses and writing those tests – training course development is expensive! Find out what's available, why it matters to you, and what difference it makes to employers.

Also up, Gilbert Detilllieux will present an RTFM on *sudo*, one of the most used (or abused) commands in a sysadmin's toolkit.

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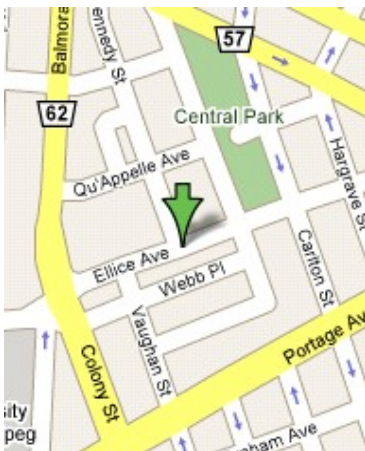
Meetings are held at the IBM offices at 400 Ellice Ave. (between Edmonton and Kennedy Streets). When you arrive, you will have to sign in at the reception desk. Please try to arrive by about 7:15pm, so the meeting can start promptly at 7:30pm.

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

May 10th, 2011

Details to follow.

June 14th, 2011

Details to follow.

Fraudulent SSL Certs Issued

SSL certs for several high-profile domains were issued in error to an untrusted party. The domains include mail.google.com, addons.mozilla.org and login.live.com. As a result, fraudsters could spoof web or email content, steal logins, etc.

Patches are available for all major browsers. Updating quickly is advised.

Nasdaq Hacked, NSA Investigates

Nasdaq Stock Exchange has revealed that it asked the NSA to help investigate after a network compromise in October 2010. Speculation abounds as to whether this signals the hackers were foreign state-sponsored.

Useful Little "-h"

Did you know, most file-size showing GNU utilities, like ls, df and du, accept the "**-h**" option for "human readable" size output? Instead of seeing a file size

listed as 8376509175, "**-h**" will tell you in terms of MB or GB, auto-selecting the most sensible unit.

The Next 640K Barrier

Eyeing that new massive 3TB hard drive for your computer? You might want to stick with 2TB for now. There are a number of compatibility issues once you go over 2TB.

The first problem is 3TB disks are switching to 4k sectors. Most systems (BIOS's, OS's) are used to dealing with 512k sector. The increased sector size is required to overcome limitations in MBR/LBA. An important consideration is to make sure your partitioning tools align to 4k boundaries, or you align it manually.

The second issue is partitioning. The ancient MBR format is being superseded by GPT which fixes a few of the problems with 3TB drives. However, booting from GPT requires a compatible BIOS, which for the most part means EFI, which most boards do not have yet. So successfully booting off a 3TB partition may be impossible on legacy systems.

For optimal performance, you must ensure your partitioning tool (e.g. *fdisk*) aligns the partitions at 4k boundaries. You can do this in *fdisk* (in util-linux-ng >=2.17.1) by typing "**c**" to disable DOS mode. You should also type "**u**" to ensure the units are sectors (not cylinders), and then make sure you create partitions with start unit multiples of 8 (512b*8=4k).

Some drive vendors are offering add-on cards with special BIOS's to allow booting on legacy hardware. Seagate claims to have freely downloadable software that somehow works around the issue, though how they manage that is a mystery. Whether these solutions will work, and work reliably, remains to be seen.

With all these issues comes the possible need for a more advanced bootloader. GRUB2 may soon be a must when booting 3TB drives, as GRUB2 understands GPT.

Lastly, your OS and filesystems need to allow >2TB partitions. Luckily, most filesystems have supported that for quite a while. Ext3 and Ext4 will happily make multi-TB filesystems. 64-bit OS's will increasingly be attractive, if not required, to work with all these new technologies as they mostly use 64-bit pointers.

Intel Chip News

Intel's new on-chip-video CPU's are pretty slick. Many new i5 CPU's are available with the "video card" built right into the CPU. This is in contrast to the legacy method of embedding the video into the Northbridge motherboard chip. Cost savings and performance gains can be had with this new design.

Many new motherboards are available, in the new (fixed) Sandy Bridge series, with onboard ports for VGA, DVI and HDMI (yes, all 3!). Look for the H67 moniker.

In other news, the Intel X58 chipset will remain the high-end offering, even with the faster Sandy Bridge CPU's. The X58 gained a lease on life with the degrading-SATA Sandy Bridge bug, but looks to be around a while longer until the LGA2011 socket comes out. The X58 can provide 4 full x16 PCIe slots, triple-channel memory and 6-core CPU's.

Pioneer Spacecraft Mystery Solved

A years-long mysterious tugging effect hampering the 30 year old Pioneer probes in deep space may be solved, using a 1970s computer graphics technique called "Phong shading". For 10 years scientists have wondered what force was acting on the spacecraft, producing a small "tug" from the direction of the sun.

Using advanced mathematics, a Portuguese team has demonstrated the heat radiated from and reflected off the spacecraft itself is to blame after all.

Pioneer, like many NASA spacecraft are powered by radioisotope thermoelectric generators, which are

basically radioactive pellets of Plutonium or Strontium, etc., that create a heat differential in two distinct metals joined in two places with a temperature difference between them. The Seebeck effect causes such a setup to generate a current loop, which can then be used to power electronics. RTG's are also found on earth in such weird places as remote, unmanned, old Russian arctic lighthouses.

Boot CDs You Can't Live Without

Ultimate Boot CD is a tinkerer's dream. The handiest aspect may be that it can successfully boot and run Western Digital's hard drive diagnostic program where the original from WD's site refuses to run. The WD version is notoriously incompatible with many boards, SATA chips, and CD-ROM drives, especially SATA ones. Diagnostics for all the other hard drive brands are included too.

You also get CPU burn-in/stress-test programs; *memtest*; *fdisk*, MBR and *grub* boot manipulators, NT password tools; *partimage* and other cloning tools; disk wipers; and more!

http://www.ultimatebootcd.com/

System Rescue CD (*sysresccd*) is a live Linux distro with an eye for system utilities like *gparted* and all the useful system manipulation, editing and recovery tools. If you need to boot up to do some *grub* manipulation, *dd* disk copies, or *ssh/scp* work, *sysresccd* can do it. It even has a minimal X setup and full R/W NTFS support.

Instead of burning a CD, you can use a USB key as a *sysresccd* boot device. To do so:

1. Download the ISO image as normal

2. Mount the ISO using loopback, like
    **mkdir /tmp/s;
    mount -o loop,exec /tmp/isofile /tmp/s**

3. Plug in the USB stick; wait 5 secs.

4. Unmount it if your system auto-mounted it
    (usually in /media or /mnt), like
    umount /media/KINGSTON

5. Run the USB install script:
    cd /tmp/s; ./usb_inst.sh

You can use the remaining space on the drive for normal files you want to carry around. Just make sure you don't delete any of the system files.

Sysresccd: don't leave home without it!

http://sysresccd.org

Sawfish WM

by Trevor Cordes

Sick of the dumbed-down, limited window managers installed by default with today's Linux distros (metacity, please stand up)? Pining for the days when you could customize and program everything? Take another look at *Sawfish* (formerly known as *Sawmill*) WM.

Sawfish lets you bind keys or mouse clicks (or both!) to every function provided by the WM. You can customize the way *Sawfish* responds to events. You can "match" windows as they are created (even using regexes) and apply special handling, such as making all new *xmms* windows sticky or setting the size of a window whose program doesn't understand the old X style **-geometry** argument. Multiple themes mean you don't have to be without eye-candy either.

Everything in *sawfish* is LISP-based. Yes, LISP. But don't run away yet; you don't ever have to see it if you don't want to, as the GUI customizing tools are exceptionally complete.

The only downside is many distros (*Fedora*, for instance) don't provide pre-built *Sawfish* packages anymore. However, it's relatively easy to build from source, though you do have to also build some obscure LISP prerequisites. Remember, real men compile their own WM's!

The most useful customizations I've found are:

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1. Customizing right-click on window frame to lower the window to the bottom of the stack: makes navigating many open windows faster.

2. Mapping ALT-ARROWKEYS to navigate left/right/up/down virtual workspaces. CTL-ALT-ARROWKEYS to similarly move the focused window amongst virtual workspaces.

3. Making window decorations/frames as small as possible for reduced wastage of screen real estate.

4. Binding CTL-Fx (x=1-12 + print screen + scroll lock + pause) to jump to the desired workspace (1-15). Yes, real men have 15+ virtual workspaces!

http://sawfish.wikia.com/wiki

Play Flash Files Without Browser

Have a *Flash* file (for example .SWF) that you want to play, but don't want to use a browser? Use the *gnash* command line tool! Handy for later, offline viewing of any downloaded/saved *Flash* files.

Another useful hint: if you're on a web page with an embedded SWF movie, you can save that movie to disk by searching through your browser cache for the file (try *find*, grepping for **swf**). Copy that file elsewhere and use *gnash* to view.

Firefox Add-On Of The Month

by Trevor Cordes

Adblock Plus is a great little utility for easily, and completely blocking out inline web page ads (or even arbitrary page elements) you find onerous. For many ads, ABP will give a little "block" option at the top when you hover over the ad. Clicking block allows you to easily add a rule to block it; all you have to do is select the granularity

of the block (whole domain, domain with some subdirectories, etc). To be safe (I'm not an ad fascist), I usually select the least-restrictive choice.

For more advanced users, you can block web page (DOM) elements based on their names or attributes. For instance, ebay's "this auction has ended, here's some other items you may like" AJAX elements that take 1+ seconds to load, and use up half of the window, can be blocked with a rule like:

ebay.ca##div#rtm_html_978

Where the first part is the domain, **div** is the DOM element type to match against and **rtm_html_978** is the *div id*. You can find the *div id* by looking in the web page source, or using the *Web Developer* add-on discussed in the January newsletter.

With the proliferation of Web 2.0, I find async page element loads which affect page layout, which push lower elements down 300-1500ms after page load, extremely annoying. This tool helps you to combat this "feature" of Web 2.0.

The other common use is to block ads that make you want to track down the web developers and AJAX their DOM. Can you say "punch the monkey" and other CPU-intensive *Flash* ads?

http://adblockplus.org