MUUGLines

## The Manitoba UNIX User Group Newsletter

Next Meeting: May 10th, 2011

Topic: mdadm (Kevin McGregor)

In this day of 3 TB disk drives, it might have occurred to you that not having to restore the whole disk from backup if it fails would be wonderful. RAID can help you with that eventuality! Just buy another $140 3 TB drive and then, um... what? Kevin McGregor will cover the basics of RAID and the practice of creating and managing software RAID arrays in Linux.

Topic: LDAP (Robert Keizer)

The basics of LDAP. An overview of what it is, what it does, and why it is used. Emphasis on applications of LDAP. Basic demo of setting up and using LDAP with PAM.

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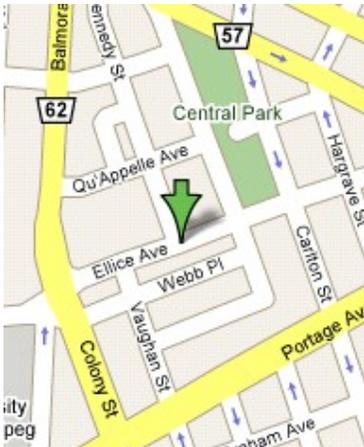
Meetings are held at the IBM offices at 400 Ellice Ave. (between Edmonton and Kennedy Streets). When you arrive, you will have to sign in at the reception desk. Please try to arrive by about 7:15pm, so the meeting can start promptly at 7:30pm.

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

June 14th, 2011

Our last meeting of the season. Sean Cody will be speaking on Practical Security. More details to come in next month's newsletter.

September 13th, 2011

We'll start the 2011/2012 year with our first meeting on Tuesday, September 13th. Stay tuned (and make sure you're subscribed to one of the mailing lists) for details on that month's presentation.

Wayland not in Ubuntu 11.04

Despite fears that X11 would vanish in Ubuntu 11.04, it appears that Wayland won't conquer the world until at least Ubuntu 11.10.

You do, however, get the "Unity" 3D-enabled desktop by default. Switching back to the traditional GNOME desktop is easy: there's a drop-down menu on the login screen to choose what type of session you want.

As far as Wayland goes, Intel is moving MeeGo to Wayland, Ubuntu is leading the charge, and Fedora has also indicated it'll move to Wayland. If you really don't want Wayland, you might consider running Debian or CentOS (or one of the BSDs), since it looks like most mainstream desktops will get it sooner or later.

KDE SC 4.7 will include OpenGL ES output support, which means it'll work natively with Wayland. No word on GNOME's integration, although Wayland is part of the FreeDesktop.org initiative, along with GNOME.

Redundant Ethernet

By Adam Thompson

Most servers built in the last ten years have at least two ethernet ports on-board, as do a large (and increasing) number of high-end workstations. Yet I see, again and again, only one of those ports in use. Why not make use of the second port, at least for redundancy if nothing else?

If you have a smart enough ethernet switch, you can run the LACP (*Link Aggregation Control Protocol*), also known as IEEE 802.3ad, between the Linux box and the switch. This protocol automatically manages multiple parallel ethernet connections and provides both redundancy and additional bandwidth.

If your switch doesn't support LACP (or you don't want to use LACP), Linux provides alternatives that provide less functionality, require more configuration, or are non-standard.

Full documentation on this can be found in the kernel source tree, under **Documentation/networking/bonding.txt**. This is the same document as the "*Linux Ethernet Bonding Driver HOWTO*", and the April 2006 version of the file, found in the *iptools* documentation, is *not* the latest version. You can also find it online quite easily.

The specifics of how to set up a "bonding" virtual ethernet interface vary from distribution to distribution; Red Hat provides explicit instructions for how to do this in the RHEL documentation as of v5, although the general steps work well (with minor tweaks) back through AS2.1. Ubuntu has documented the process since 6.10, and as of 10.10 the configuration got quite a bit simpler.

Most operating systems support LACP (IEEE 802.3ad), EtherChannel™ (Cisco proprietary), ARP balancing (semi-proprietary, doesn't work with some switches and/or routers), or some other form of load-balancing and/or redundant ethernet. Even Windows can support it, although there it's in the hands of the ethernet driver writers: both Broadcom and Intel support bonding-type functionality for their server-class ethernet chips. It's difficult to enable this function on a Windows workstation OS. Mac OS X supports every option FreeBSD does, naturally, and is pretty much on par with Linux.

To use LACP/802.3ad, your switch must support this. If you are using an older Cisco switch that doesn't support LACP, it probably supports EtherChannel™ instead. Some other switches also support EtherChannel, and virtually any managed switch can be made to work somehow. If you are using an unmanaged switch, you are limited in your options but you can always at least get simple fail-over for redundancy.

Lastly, don't expect any single TCP flow to magically double in speed; these techniques only allow your system to handle more traffic overall, but individual conversations are still limited to a single ethernet link within the group.

Ubuntu 11.04 Beta 2 available

Beta 1 successfully crashes my notebook very well, so Canonical heard my complaints and released Beta 2 just to make me happy...

One of the bigger changes in 11.04 is the lack of a Netbook Edition. Canonical claims that a single version of Ubuntu now scales from Netbooks up to high-end workstations. Presumably servers are still supposed to run Server Edition, since it still exists.

Apparently the best way to accomplish this is to inflict the Netbook Edition GUI onto desktop users.

Anyway, Beta 2 apparently is much more usable than Beta 1 was. Let us know if you try it!

Canonical (Ubuntu) HCL now public

The last time a Hardware Compatibility List was reasonably current and useful, the PC world was still dominated by no more than a dozen or so manufacturers in each category. Novell NetWare was

still king of the LAN. OK, maybe not quite that long ago, but even Red Hat's HCL has been pretty much useless for most of the last decade.

Canonical (the makers of Ubuntu), however, has continued to keep track of these things. Naturally, their list is predisposed towards Tier-1 manufactures and the components those companies use, so your favourite video card or motherboard is unlikely to appear on the list. This is intended for companies who don't have time to worry about what components work with what version of Linux, for whom time is more valuable than the extra cost of buying IBM, HP, Dell, or the like.

See for yourself at:
http://www.ubuntu.com/certification/catalog.

Note that the vendor "ATA" is a catch-all for ATA-type disk devices. Although the vendor name is often present in the IDENTIFY response, it's a free-form string and presumably Canonical didn't want to invest the time to parse it.

Novell bought by Attachmate, SuSE to be run as separate company again.

Attachmate Corporation has acquired Novell's business units, including the OpenSUSE product line. OpenSUSE fans will likely be happy that SUSE is to be run as an independent company once again, without the Novell millstone around its neck.

OpenSUSE 11.4 was also released recently; one of the major new features is the availability of a rolling-release repository called "*Tumbleweed*", which should make it easier for users to stay up-to-date with the very latest software.

More worrisome to many UNIX users is that Novell is selling its large patent portfolio to a consortium that includes Microsoft.

Ubuntu to eliminate "Quit" command?

(Yes, there's an awful lot of Ubuntu-related news in this issue. Feel free to tell your favourite project that they're asleep at the wheel.)

In a blog post by a member of the Ubuntu Design team (**http://design.canonical.com/2011/03/quit/**), Matthew Paul Thomas talks about how Ubuntu is going to retire the "Quit" command from GUI applications.

If nothing else, this blog entry certainly prompted an awful lot of involvement from a large number of readers (235 comments as of this writing).

Whether you agree with Thomas' premise or not, it does raise the interesting question of what happened to the UNIX philosophy of "one tool for one task"? A modern web browser is "one tool for every task"!

What happened to OpenOffice?

Anyone who doesn't follow /. religiously might not have noticed why *OpenOffice* updates are no longer as regularly forthcoming as they once were.

It's unclear (to this editor) whether this is a preemptive move to forestall problems, or a reaction to a problem, but Oracle owns the *OpenOffice* trademark. Oracle has a noticeably schizophrenic and somewhat paranoid attitude towards open-source projects, even the ones it sponsors.

The core OO team has established a new name for the free ("as in speech") *OpenOffice* product: it's now called *LibreOffice*, and it's organized under the auspices of The Document Foundation.

From The Document Foundation's website:

> *"Our mission is to facilitate the evolution of the OpenOffice.org Community into a new open, independent, and meritocratic organizational structure"*

This is – somehow – not a fork of *OpenOffice*. It'll be interesting to see what happens with this; perhaps Oracle isn't interested in selling an office suite (for the third time)? If so, funding will likely dry up and we should expect the rate of *LibreOffice* updates to slow down just as much.

The upgrade from *OpenOffice* to *LibreOffice* may not be trivial; read the release notes for your distro's port or package carefully before attempting it.

Google forgets what "open" means

Google has declined to release the Android 3.0 ("*Honeycomb*") source code to the public, despite the fact that binary versions of the code are already shipping in the form of the Motorola *Xoom* tablet.

Android follows the Apache Software License, not the GPL, although some components are covered by the GPL. Presumably the GPL-licensed components can be found online somewhere. Although the ASL requires source code to be released, it doesn't specify precisely *when*.

So much for "given enough eyes, all bugs are shallow".

Itanium turns 10, still breathing

The *Itanium* chip, co-developed by Intel and Hewlett Packard, was launched ten years ago to much fanfare.

Hewlett-Packard realized in 1989 that a new superscalar architecture was needed, as the single-issue RISC CPUs of the day were approaching theoretical performance limits. HP's new approach was EPIC ("explicitly parallalel instruction computing"), and relied heavily on the compiler rather than on complicated on-chip schedulers.

In 1994, Hewlett-Packard teamed up with Intel to continue the development of EPIC-type CPUs, and started a long-term partnership to develop the IA-64 architecture. Compaq decided to drop the Alpha series in favour of IA-64, and SGI made the same decision about MIPS.

At release, the IA-64 was supposed to run Windows, Linux, HP/UX, Solaris, Tru64 UNIX, Monterey/64 (a blend of AIX, SCO and DYNIX). It also soon ran HP's NonStop mission-critical OS, and by the time HP bought Compaq, OpenVMS also ran on IA-64. Several flavours of BSD also run on IA-64 today, as does Groupe Bull's GCOS.
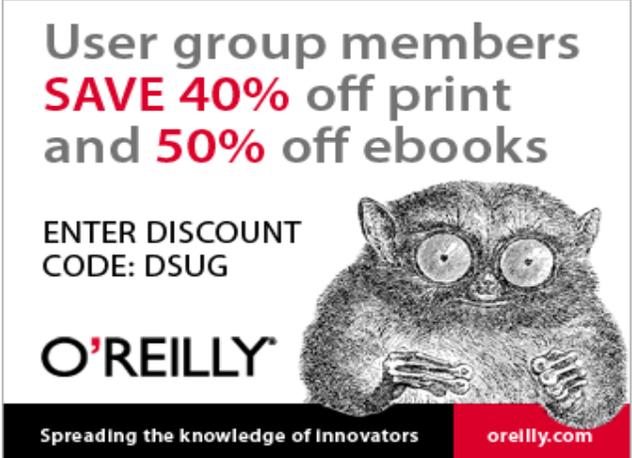
Red Hat dropped Itanium support as of RHEL 5 due to lack of sales. Sun dropped Itanium support for Solaris after a single release, again due to lack of sales. Ubuntu 10.04 LTS is the last version of Ubuntu for IA-64. HP will not be certifying any version of Linux on the upcoming Itanium 9300 ("Tukwila") servers. Microsoft will not support IA-64 beyond Windows Server 2008 R2. Oracle has just discontinued all IA-64 development, claiming Intel told them "Itanium was nearing the end of its life".

Intel maintains that they are still committed to the IA-64 roadmap, which currently includes two more generations of processor, scheduled for release in 2012 and 2014 respectively. HP also recently reiterated its support for their IA-64 line of servers. Bull has not announced any changes in their plans to continue making Itanium-based mainframes, but has discontinued their general-purpose IA-64 server..

In April 2011, Huawei and Inspur announced they will develop Itanium-based servers.

Intel's insistence Itanium isn't dead sounds an awful lot like Compaq insisting "Alpha is still viable" right up to the very end.

If the IA-64 architecture does wither away and die like Alpha and a litany of others, that will leave POWER, SPARC, MIPS and ARM as the only viable competitors to the Intel x86 architecture. Of those, only MIPS and ARM even have anyone *looking* at the general-purpose market. At least we'll probably always have AMD!