MUUGLines

The Manitoba UNIX User Group Newsletter

Volume 34 No. 1, September 2021 Editor: Trevor Cordes

Next Meeting: September 14th, 2021 (Online Video Meeting)

Feature Presentation: tmux(1) – THE terminal Multiplexer

This month, following up on his newsletter article from June, Brad Vokey will demonstrate tmux(1). tmux enables a number of terminals to be created, accessed, and controlled from a single screen. It can then be detached from your screen and continue running in the background, and then reattached later. Each session is persistent and will survive accidental disconnection (such as a ssh(1) connection timeout) or intentional detaching. Each session can also be attached to multiple different terminals, for easy access to your running server processes and current environment from multiple different computers all at the same time. Brad will go over the basic commands and concepts and will also demonstrate the tmux plug-in manager (tpm) showing us some useful plug-ins including:

- tmux-resurrect (persists tmux environment across system restarts)
- tmux-yank (tmux plugin for copying to system clipboard)
- tmux-autoreload - Watches your tmux configuration file and automatically reloads it on change.
- tmux-continuum - Continuous saving of your tmux environment. Automatic restore when tmux is started. Automatic tmux start when computer is turned on.

and possibly more, if time permits!

The latest meeting details are always at:
`https://muug.ca/meetings/`

Where to Find the Meeting:

This meeting will be utilizing a different video conferencing server than usual due to a migration away from our previous MERLIN hosting. Please watch the muug website for details as they become available:

`https://muug.ca/`

Thanks again to MERLIN for graciously hosting our online meetings from March 2019 through June 2021.

The September meeting will once again be BYOPAC (bring your own pop and cookies), as we have not yet perfected the technology to deliver goodies through the ether.

Zack's Kernel News Nugget

Zack Brown distills the LKML into really nice summaries each month. Linux Pro Magazine publishes his summary in every issue. It's a great, high-level view into what is going on in the world of the kernel, and he often provides his special insight, comments and quips. Recently he noted:

> *Eventually the kernel build system will be clean and beautiful and easy to use, but that day will only come because of the psychotic determination of obsessive lunatics like Nicolas, Saeed, and the rest.*

Debian 11 Bullseye Released

After two years of development, Debian released version 11 "Bullseye" in August with a little less fanfare than usual. There are no mega-changes, and this feels more like an incremental update this time around.

Some notable new features are:

- Native exFAT support so you don't have to use exfat-fuse
- Driverless printer support for very modern printers that support ipp-usb, vendor neutral IPP-over-USB
- Continued support for over nine different CPU architectures

https://www.debian.org/News/2021/20210814

Linux Turns 30

Linus Torvalds recently "noted the 30th anniversary of the creation of the Linux kernel". He made a joke regarding the non-existent mainstream fanfare for this major milestone in his usual Sunday kernel release note:

> *So I realize you must all still be busy with all the galas and fancy balls and all the other 30th anniversary events, but at some point you must be getting tired of the constant glitz, the fireworks, and the champagne*

Linux was originally called Freax, meaning "Free UNIX", but, for better or for worse, that name never caught on.

Also touted is the new 5.14 kernel release with better or new support for Intel Alder Lake mobile CPUs, AMD CPUs, and the Pi 400 PC.

Here's to the next 30 years!

https://www.zdnet.com/index.php/category/2248/6/index.php/article/linus-torvalds-get-ready-for-another-30-years-of-linux/

memfd_secret()

Linux kernel 5.14 includes a "finished" version of memfd_secret() which allows a program to create a range of memory that only it (and its forked children) can access. Yes, even the kernel cannot access the memory set up with this new call.

This system call (and its predecessors) has been a work in progress for two years. It would seem the call is considered polished enough to gain widespread adoption on normal kernel builds.

The main use case is to house cryptographic secrets that no other part of the system would need access to.

https://lwn.net/Articles/865256/

FreeDB Kaput

Anyone who used to rip CDs (and the few of us who still do) will know about CDDB/FreeDB. FreeDB has been around nearly twenty years. It took over from CDDB when CDDB went proprietary and became difficult to support in FLOSS software. It allowed users to enter track titles, etc., for the CDs they were ripping for automatic file naming and id3 tagging. The data was placed on FreeDB servers where other users could make use of it.

In slightly dated news, FreeDB's parent company ceased operations for it in 2020. That means all that crowdsourced data is lost to the bit bucket. It also means any CD programs with FreeDB support will no longer function properly when it comes to CD & track data. Most will show errors.

However, a new database, called MusicBrainz, which is under the CCL, has taken over. But you'll need to find versions of your software that support it.

https://liliputing.com/2019/12/freedb-is-shutting-down-in-march-2020-free-music-database.html

Systemd Takes Over DNS, Badly

Like a fungus spreading across an alien planet, Systemd continues its mission creep toward world domination. In today's episode XLIII, Systemd gets its own caching name resolution client, systemd-resolved. It's been in there for a little while, but most distros weren't using it by default until recently.

If you don't want to run BIND, or dnsmasq or a similar caching resolver, I guess you could do worse than systemd-resolved. However, as Fedora found out, systemd-resolved has its flaws. From a Fedora 33 note on the subject (emphasis ours):

systemd-resolved's DNSSEC support is known to cause compatibility problems with certain network access points[...]. Per recommendation from the systemd developers, we will change the default value of this setting in Fedora from the upstream default DNSSEC=allow-downgrade to DNSSEC=no by building systemd with the build option -Ddefault-dnssec=no. The upstream default attempts to use DNSSEC if it is working, but automatically disable it otherwise, allowing man-in-the-middle attackers to disable DNSSEC. Sadly, even the allow-downgrade setting suffers known compatibility problems. ***Because Fedora is not prepared to handle an influx of DNSSEC-related bug reports, we will disable this feature altogether. We anticipate that enabling DNSSEC by default will not be possible in the foreseeable future, or perhaps ever.***

PHP8: Coming Soonish to a Distro Near You, We Promise

You've probably already heard about PHP8, it's been announced and available for quite a while now. However, most distros have held back on making it the standard PHP version they ship. For instance, Fedora has pushed it back at least two Fedora versions versus the originally planned ship date.

Why? Because PHP8 has a few significant backwards compatibility issues that will break a lot of existing code.

However, this will soon change as Fedora 35 is expected to ship with PHP8 sometime in October.

So what do you get?

Perhaps the best part is a JIT compiler. Combined with the existing OPcache and Zend systems, code will be compiled once, as needed, and stored internally for reuse.

CPU-intensive tasks get the most benefit from this new feature, gaining up to 3X performance. Unfortunately, many typical PHP workloads, such as WordPress and MediaWiki gain very little: from zero to a few percentage points. This is because they are limited by external factors such as database speed.

Still, 0 to 3X performance enhancement, basically for free, is better than a sharp stick in the eye.

As for compatibility breaks, the feared worst case scenario regarding some of the craziest ideas did not materialize. Many of the insane ones were turned into warnings rather than errors, allowing more time for reflection and reversal. For example, reading an undefined variable or array key is still allowed, albeit with a warning.

On the bright side, some of the great new features include: named arguments to functions; a match expression which works like switch but allows return values and can be used as an expression rather than flow control; and easier to use string-in-string functions like str_contains, str_ends_with.

Final verdict: Looks like a lot of pain for a modicum of gain, but it could have been worse. It's easy to see why it's been delayed in the distros.

Linux Steams Ahead

Steam Survey announced that in July 2021 Linux use of Steam hit 1.0% share of its market. Steam is an online, digital video game distribution service made by Valve, the creators of Half Life. It has nearly 100 million monthly active users. That means there are nearly a million gamers actively using Steam on Linux.

Steam's recently introduced Proton technology may have helped increase the Linux marketshare. Proton is an extra compatibility layer that allowed nearly every Windows game on Steam to run on Linux with a minimal of technical knowhow. And for the most part, it really works.

At its core all of this runs via WINE, but Steam/Proton greatly simplify the process to eliminate much of the frustration and time expenditures you can experience battling directly with WINE.

Your editor has been using Steam recently on Linux within a firejail to securely run old-tyme 90's Windows games on Linux, to great success. The best part is Steam has many of these games for around a buck or two, and they are almost always the latest/

last patch levels and/or "complete" collections with all the add-on packs. For a buck you can save trying to get the old Windows CD-ROM version you have kicking around to work, and save fighting with patches and CD-protection problems inherent in WINE.

One of the few reasons left that Windows users offer as to why they can't run Linux – games – is now moot.

https://linux.slashdot.org/story/21/08/02/2042209/steam-survey-shows-linux-marketshare-hitting-10

Linux Tracing Improves

Heard of LTTng yet? It's an open source tracing framework for Linux. It touts low overhead, often only around 3%. It traces interactions between the kernel, C/C++/Java/Python applications and any user space program using the LTTng logger.

It allows you to trace locally, remotely, in a real-time live stream or in snapshots. It's fully supported on all the big distros including Debian, Fedora and Arch. It has some pretty nifty GUI trace interpretation tools as well.

https://lttng.org/

Firefox 92 Released

Hot off the presses comes Firefox 92. This incremental release adds "full-range color levels for video playback on many systems", improved JS memory management, automatic HTTPS upgrades when HTTPS RR is available (via Alt-Svc headers), updated bookmark toolbar menus and redesigned certificate error pages (yay!).

antiX Linux Works Where Most Don't

Your editor recently had a requirement to run Linux on a 32-bit pico-ITX box with only 256MB of RAM (including shared video memory), but oddly enough a 1GHz CPU. A bit unexpectedly, the RAM limitation was just as difficult to overcome as the bit-width problem. Having done Puppy linux before, something a bit easier to install was desired.

Very few distros support 32-bit and low memory these days. antiX stood out in a brief survey of options, and it didn't disappoint. Though the install was complicated a bit by the required co-existence with a Windows XP system on the same box and a pre-setup partition scheme, the process was fairly smooth and any medium-level Linuxphile could get it working.

The antiX maintainer is quite a character, but his distro is well suited for this use case. One of the bonuses is he's vehemently anti-systemd, definitely a plus on low-mem boxes. (I'm pretty sure things would get ugly real fast if he was put in a room with Lennart. <grin>)

The icing on the cake is the distro is already hosted on our very own muug.ca mirror server. What more could you ask for?

https://antixlinux.com/

Help us promote this month's meeting, by putting this poster up on your workplace bulletin board or other suitable public message board:

https://muug.ca/meetings/MUUGmeeting.pdf

A big thanks to Les.net for providing MUUG with free hosting and all that bandwidth! Les.net (1996) Inc. is a local provider of VoIP, Internet and Data Centre services. Contact **sales@les.net** by email, or +1 (204) 944-0009 by phone.

Thank You Michael W. Lucas

MUUG would like to thank Michael W. Lucas for donating one of his ebooks every month as a door prize. You can view and purchase his tech books here:

https://www.tiltedwindmillpress.com/product-category/tech/

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