Why #CentOS is a great Desktop distribution
(and why Ubuntu in the end often is a better choice)
"Who is that guy standing there and is he qualified for this talk?"
known in the Linux world
more for his kernel work
(tacking development & regression tracking)
Kernel regression tracking, part 2

By Jonathan Corbet
November 6, 2017

The tracking of kernel regressions was discussed at the 2017 Kernel Summit; the topic made a second appearance at the first-ever Maintainers Summit two days later. This session was partly a repeat of what came before for the benefit of those (including Linus Torvalds) who weren't at the first discussion, but some new ground was covered as well.

Thorsten Leemhuis started with a reprise of the Kernel Summit discussion, noting that he has been doing regression tracking for the last year and has found it to be rather harder than he had expected. The core of the problem, he said, is that nobody tells him anything about outstanding regressions or the progress that has been made in fixing them, forcing him to dig through the lists to discover that information on his own. He had, though, come to a few conclusions on how he wants to proceed.

First, he will try again to establish the use of special tags to identify regressions. His first attempt had failed to gain traction, but he agreed that he perhaps had not tried hard enough to publicize the scheme and get developers to use it. He will be looking into using the kernel Bugzilla again, even though it still seems like unpleasant work to him. He'll try to improve the documentation of how regressions should be tracked and handled. There is a plan to create a new mailing list on vger.kernel.org, with the idea that regression reports would be copied there. He will put more effort into poking maintainers about open regressions.

The discussion quickly turned to the problem (as seen by some) of the many kernel subsystems that do not use the kernel.org Bugzilla instance for tracking bugs. Peter Anvin said that many developers don’t see much value in that system. Reported bugs tend to say something like "my laptop doesn’t boot" with no further information; that tends not to be useful for the identification of any actual bugs. Beyond that, many bugs reported against the core kernel or x86 architecture turn out to be driver bugs in the end.

Users, it was suggested, should be explicitly directed to the mailing lists when reporting bugs for the subsystems that do not use Bugzilla. Laura Abbott said...
used to be a quite active Fedora contributor
whoami

https://fedoraproject.org/wiki/Kernel_Vanilla_Repositories
working for a mainstream German computer magazine regularly testing Linux distros there
Die Sicherheits-Checkliste

Handy, Router, NAS, Smart-TV, Server, Browser, Facebook ...

Upgrade auf Windows 10 stoppen
VR-Brille Samsung Gear
USB-Sticks mit Typ C
Fairphone 2 im Test
Spiel-Highlights 2015

Audi macht Ernst mit VR
Die Kabel-Deutschland-Lücke
Web-Typographie
Linux-Prozessmanagement
GUI mit Python
Skylake übertakten

Alte und billige Tablets sinnvoll nutzen

Coole Tablet-Projekte
Second Screen, Notenständer, Info-Display, Auto-Infotainment ...

Richtig einstellen mit wenig Aufwand

Linux-Kernel 4.4

3D-Grafiktreiber für virtuelle Maschinen und mehr Sicherheit bei RAID 5


so why am I here?
running CentOS on servers just one at home and one at work
CentOS on machines
I administrate for less tech-savvy people
helped to get EPEL running
helped to get RPM Fusion running
goal:

make CentOS a kind of Fedora LTS

a Fedora developer who wanted to feel right at home on CentOS
CentOS worked quite well for my first long-term girlfriend's desktop

~15 years ago, CentOS 4, iirc
didn't work out for my second long-term girlfriends Laptop

~4 years ago, CentOS 6 (32 bit x86)
installed Xubuntu 16.04 instead :(-/
a new co-worker recently had trouble, too

installed Fedora instead
those incidents were one motivation; the other:

my work / our magazine
we sometimes write articles like use ${this Linux} ${like that} on machines you want to use for ${Particular_Use_Case}
${\text{Particular	extunderscore Use	extunderscore Case}} \quad ==

home server

\textit{CentOS strong contender that gets used sometimes}
$\{Particular\_Use\_Case\} ==$

Desktop for less tech-savvy people

(aka friends and family)

note: Desktop includes Laptop use here and from now on
CentOS was sometimes considered, but always quickly discarded.
I did not like that much, but had to agree
multiple reasons why it's not the best choice for a...
mainstream magazine that wants to make sure readers are happy

we want them to buy the magazine again ;-)
in the end, most of the time we agreed on...

Ubuntu
CentOS with a few tweaks could be great for this use case
let's dig into this

why CentOS is great, but OTOH failed to satisfy

for Desktop/Laptops, at home & at work
first & quickly:

why it's great
what a lot of people want on Desktops
install and use till you throw the hardware away
never have to learn anything brand new during that time

or adjust yourself or some config file to new versions

aka "stable" (stands for "not changing much" and "reliable" here)
CentOS is way better than all the other distros here
CentOS:
it's no cost & gets 10 years of regular support
nearly 7 years if you install right before a new major version
Ubuntu:

5 years of regular support

only 3(!) if you install right before a new major version
note:
some less tech-savvy people use hardware even longer…

but we leave that aside here, 7 to 10 is enough for most
side note:

Mint is similar to Ubuntu Debian, too (with LTS)

all other free distros are worse
there are more areas where CentOS shines or at least is not as bad as people think
CentOS:
relative modern software for a enterprise/LTS distro

relaxed update approach, still avoids disruptive change
new versions for Desktop software are okay, but…
...big differences (like Gnome 2.y->3) still are a "no-no"
bad point in time to explain, as RHEL8 is not old enough yet
Gnome and LibreOffice get rebased

Gnome 3.28.y, released Mar 2018, is currently in RHEL/CentOS 7.x (initially released in 2014)

Libreoffice 5.3.y, released Feb 2017, is currently in RHEL/CentOS 7.x (initially released in 2014)
Gnome and LibreOffice never get rebased in Ubuntu LTS will stay in 18.04 on 3.28 and 6.0 till EOL – IOW: the well known classic approach Debian uses everywhere
so you don't get any of the bugfixes that new versions of Gnome and LibreOffice brought

bit yes, you obviously sometimes get new bugs, too :-/
related:

CentOS also gets support for newly released hardware
CentOS:

Updated HW support every 6 months

(first after 6 months)

for the first 5 years

(~10 minor updates with driver updates in total, one every 6 month)
Ubuntu:

Updated HW support every 6 months
(first after 9 months)

for the first 2 1/4 years
(4 minor updates with new drivers in total, one every 6 month)
RHEL 8.1 brought DRM from Linux 5.1 in November that's newer than Ubuntu 18.04.3

DRM == kernel graphics driver subsystem & drivers
Ubuntu 18.04.x still is on Linux 5.0 since 18.04.3, released in August; to be fair: Ubuntu 18.04.4 will soon bring Linux 5.3
side note:
Debian stable does not get fresh drivers for newly released HW apart from those that make it to the stable kernel
becomes a bigger problem over time

the older a Debian release gets
IOW: no clear winner here

but the 4.18 based Linux kernel in CentOS is not as bad is it sounds

and sometimes better than kernel 4.19 in Debian GNU/Linux 10
reminder:
this was just about graphics drivers
situation more complicated...
and that's why the CentOS kernel *is* a problem, but we'll get to that
CentOS very interesting due to

* long life time

* minor releases with update software and drivers
so where is CentOS lagging behind?
three problems on my current girl-friends Laptop
video camera failed

needed a media driver not enabled in the RHEL/CentOS kernel
wifi needed
proprietary driver

missing as well: broadcom-wl :-/
dependency problems
when installing audio and video packages from a 3rd party side
*I* would have been able to work around all those problems but in the end I choose it's not worth the maintenance hassle;

installed Xubuntu 16.04 instead :-/
these problems are anything but atypical
turns out these are quite similar to concerns at work, too

*albeit from different angle*
users need FOSS drivers for quite old and brand new hardware
some users require proprietary drivers
most users want to easily install software

CentOS does not ship must work flawlessly
so let's look closer at the problems
= first problem =

hardware support with free drivers
RH disables quite a few kernel drivers relevant for Desktop users.

quite a few == hundreds, maybe thousands, afaics
[thl@xps13 kernels]$ find */lib/modules/4.18.0-147.el8.x86_64/ -type f | wc -l
2509
[thl@xps13 kernels]$ find */lib/modules/5.3.7-301.fc31.x86_64/ -type f | wc -l
3553
[thl@xps13 kernels]$
that's not the only problem with the kernel
minor releases bring drivers for newly released hardware, but...
…that's too late for people at the up front
...RH focuses on enterprise hardware
popular Intel WIFI: likely not that far behind unpopular Realtek WiFi: depends on the model and a bit of luck gaming hardware?
just 3 examples to show:
the RHEL-Kernel holds CentOS back on the Desktop
see no easy solution within the bounds of the CentOS project's goal
described as bug-to-bug compatibility!
possible solution:

a different kernel in an official add-on repo?

easy to use alternative for those that really need it
maybe use the Fedora kernel

likely will need a slightly adjusted .config...
maybe offer the latest Longterm kernel derived from Fedora once a year?
not much else needed for supporting a broader range of Hardware

both old & fresh
an up2date Mesa/Libdrm would be good for gaming

no need for frequent Xserver rebases anymore
sure...

nothing you likely can do in your spare time

but definitely does not need a team of 10+ persons ;(-)
this would have fixed the first problem

gf. Laptop: missing free driver

magazine: proper support for most old and new hardware
second problem

drivers & software missing in RHEL/CentOS

gf. Laptop: broadcom-wl

magazine colleagues: nvidia is hard
Fedora is not good here either.

*in CentOS it's worse*
NVIDIA Corporation: GF108 [GeForce GT 430]
Dieses Gerät benutzt einen alternativen Treiber.
- NVIDIA binary driver - version 361.42 von nvidia-361 werden verwendet (Proprietär, getestet)
- NVIDIA legacy binary driver - version 304.131 von nvidia-304-updates werden verwendet (Proprietär)
- X.Org X server – Nouveau display driver von xserver-xorg-video-nouveau werden verwendet (Quelloffen)
- NVIDIA legacy binary driver - version 304.131 von nvidia-304 werden verwendet (Proprietär)
- NVIDIA binary driver - version 340.96 von nvidia-340 werden verwendet (Proprietär)

Unbekannt: Unbekannt
Dieses Gerät benutzt einen alternativen Treiber.
- Processor microcode firmware for Intel CPUs von intel-microcode werden verwendet (Proprietär)
- Das Gerät nicht benutzen

1 proprietärer Treiber in Verwendung.
Proprietäre Treiber enthalten privaten Quelltext, den Ubuntu-Entwickler weder überprüfen, noch verbessern können. Sicherheits- und andere Aktualisierungen hierfür können nur vom Treiberanbieter bereitgestellt werden.
it needs to get as easy as least as easy as it is in Fedora
better:
even more straightforward than in Ubuntu

*that includes proper Optimus support (important to support modern Laptops properly)*
proper FOSS driver not in sight, so...

tried to improve things in this area once

got frustrated (among others)

dealing with Red Hat side was hard :-/
work on the Fedora & CentOS side needed

might be impossible for RH-employees – but they could help encourage and help on their side
related:
there is another thing, where Ubuntu is way ahead
Ubuntu:

disabling secure boot restriction is easy

mokutil --disable-validation
Installation von Ubuntu wird vorbereitet

☐ Herunterladen der Aktualisierungen, während Ubuntu aktualisiert wird
Dies spart Zeit nach der Installation.

☑ Installation von Drittanbieter-Software für Grafik- und WLAN-Geräte, Flash, MP3 und anderer Medien
This software is subject to license terms included with its documentation. Some is proprietary.
Die MP3-Erweiterung von Fluendo enthält »MPEG Layer-3«-Audio-Dekodierungs technologie, die vom Fraunhofer IIS und von Technicolor SA lizenziert sind.

☑ Turn off Secure Boot
Ein Passwort auswählen: ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ❌
it's explained to you why & when you need to do it among others, to use any additional kernel drivers (Nvidia, VMware, ...)
so something quite a few people will want :-(}
also something where Fedora would need to provide foundations

problem worse for CentOS users: harder to find solutions on the net
improvements would fix my second problem

gf. Laptop: missing nonfree driver

magazine: proper, easy to use support for nvidia's proprietary driver
third problem

installing additional Software must be easily
gf. Laptop & colleagues:
third party repos and proprietary software like Chrome, Stream, ...
CentOS looks bad when compared to Debian
Debian:

devty to fifty thousand packages
in their default repos!
Debian: not only makes FLOSS, but also "freeworld" stuff easy to come by

vlc, unfree video drivers, VirtualBox are all part of the distro
Debian:
properly filled de-facto standard repo for nonfree software

nvidia drivers, steam, doom-shareware files, ...
Debian:
all take care of for at least three years

most of it even for five
(thx to optional LTS)
Ubuntu not as good as Debian
Ubuntu: not as many packages as Debian, but a good deal of it still way better than CentOS
Ubuntu:
also a de-facto add-on repo
makes installing freeworld and nonfree software really easy when compared to CentOS
Ubuntu: codec install sometimes happens semi-automatically without user noticing much or anything at all
Installation von Ubuntu wird vorbereitet

- Herunterladen der Aktualisierungen, während Ubuntu aktualisiert wird. Dies spart Zeit nach der Installation.


- Turn off Secure Boot
  - Ein Passwort auswählen: [●●●●●●●●●]
  - Passwort wiederholen: [●●●●●●●●●]

Löschen [Beenden] Zurück [Weiter]
disclaimer for Ubuntu:

reminder: only packages in "main" get five years support

round about a package set not that different from RHEL/CentOS
most Ubuntu users seem to not care: packages in universe and multiverse are only "community supported"

quite a few packages after importing from Debian never get touched again
still, from the point of users

CentOS is way behind in several aspects
EPEL helps quite a bit

but: not enabled by default, less packages
on every system I used CentOS for at least one package from stock Fedora I could not easily come by. It's not really bad, but [c|sh]ould be a bit better.
Situation worse for things that CentOS/Fedora/RHEL can't include

freeworld software (vlc, unfree video drivers, VirtualBox, …)

nonfree software (nvidia drivers, chrome, steam, doom-shareware files, …)
Flatpak/Flathub starts to help here somewhat even more in the future?
but it won't help with things you want on the host OS

*nvidia drivers, video codecs*
sure, a lot of packages are available in 3rd party repos

if you google you soon get into a mess which repo to use
googling for "3rd party repo centos":
find docs like "the 8 best 3rd party repos for CentOS"
RPM Fusion, elrepo, negativo17.org, GhettoForge, NUX-dextop, ....

"interesting" things will happen when you mix them... ;(-)
this needs to be easier:
https://wiki.centos.org/AdditionalResources/Repositories
an when googling for Nvidia & CentOS
find lot's of howtos that explain manual installation :-/
those were the three biggest problems #imho

problems that prevent CentOS from being a good choice for non-tech savvy Desktop users
obviously, as always, there are more
I mentioned a co-workers problem: installing CentOS on a Desktop machine

bug in anaconda

(a more recent Fedora installed just fine)
I've seen things like that on unorthodox or old computers now and then happens, but...
normal distros: someone will hopefully file a bug and it hopefully get's fixed!
for CentOS that won't work seems CentOS stream might somewhat? at least if RH devs see a problem relevant for them…
another problem for non-tech savvy people
updates *really* need to be reliable

RHEL/CentOS is good there, but…
traditional package updates methods have their pitfalls
`rpm -U` and `dnf update` sometimes fail – it's rare, but a power loss during updates still can mix up the system pretty badly
a "CentOS Silverblue" could be a big step forward here

but I guess we'll see that down the road anyway
okay, that were three big and two smaller problem areas now

enough for now, let's get to an end
feedback

please provide feedback

talk to me: negative and positive feedback welcomed
takeaways

follow me, if you want:

@knurd42rhfc on #twitter or knurd42rhfc@fc.leemhuis.info on #friendi.ca (the latter works on mastodon and diaspora, too)
takeaways
Takeaways
CentOS offers a lot for people that look for a LTS desktop distro
a lot is great, but some things often disqualify it for non-tech savvy users

hw must be supported and a lot will want unfree codecs and Nvidia…
that's why Ubuntu in the end often is way more attractive
some groundwork to improve things would have to be done in Fedora
find a solution for the "RHEL kernel sometimes a bad fit" problem

that will be hard, too :-/

esp. maintenance
work towards a better EPEL plus *one* proper 3rd party
to provide all the FOSS and the freeworld & nonfree stuff users typically need
huge amount of work and not much leverage to make money out of it
:-/
still worth the effort,
IMHO
CentOS could be one of the most attractive LTS Desktop distros. More testers, more bugs found – benefit for RHEL.
RHEL desktop users would benefit from some of this, too
Fedora would benefit from some of this, too
and the best and most versatile "distro universe" on the market

*Fedora rawhide = development, integration*

*Fedora (getCurrentRelease()) & (getCurrentRelease()-1)= for those that want a really or moderately fresh distro*

*RHEL & CentOS for the typical enterprise and server usage*
Fedora rawhide = development, integration
Fedora (getCurrentRelease()) & (getCurrentRelease() - 1) = for those that want a really or moderately fresh distro
RHEL & CentOS for the typical enterprise and server usage
an the Desktop!
that's it – questions?

*(TWIMC: this is slide #152)*
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4 others, see www.leemhuis.info/me/

#EOF