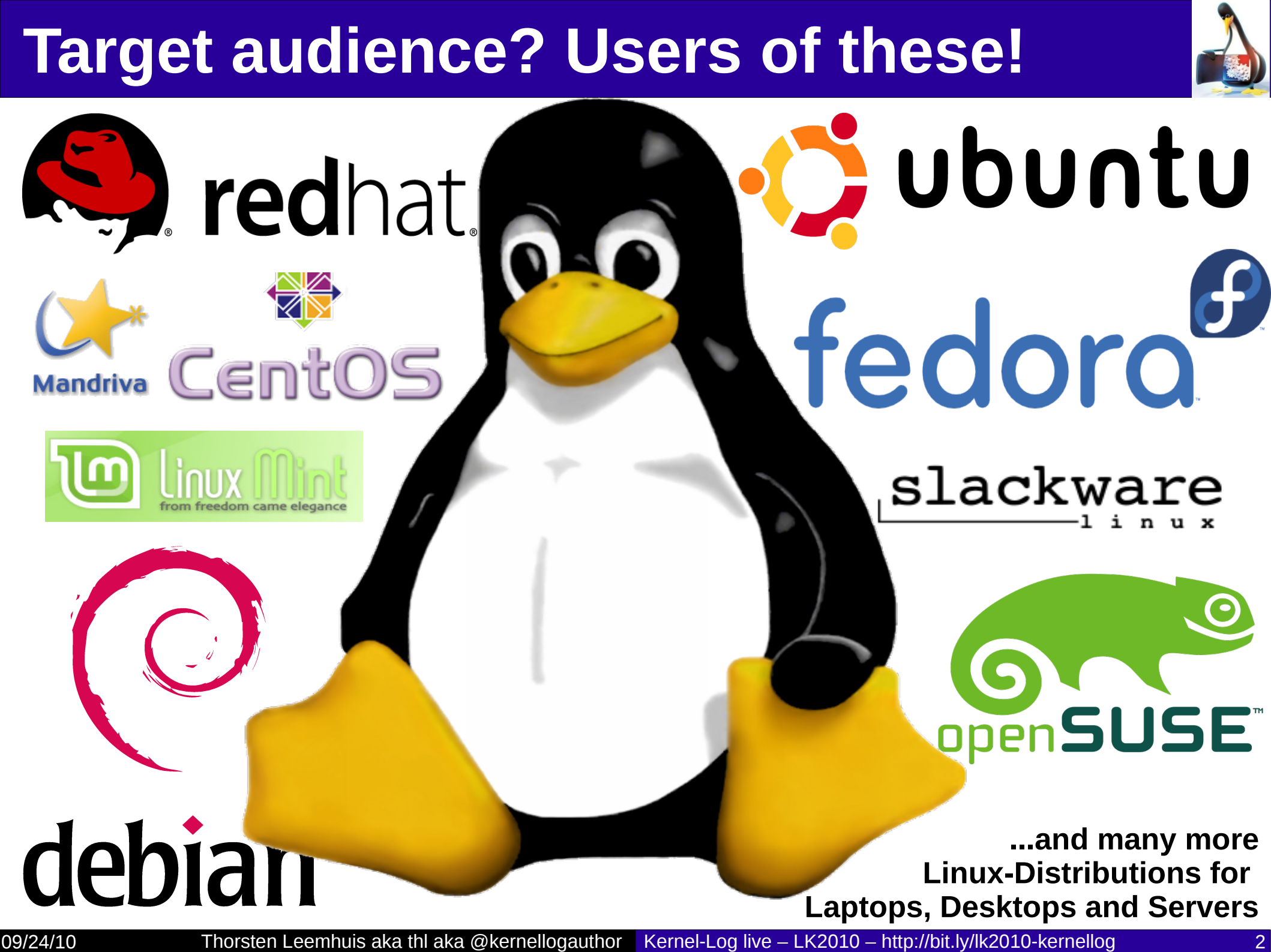
What´s up in Kernel-Land?

Target audience? Users of these!



...and many more Linux-Distributions for Laptops, Desktops and Servers

whoami @ work

Heise Zeitschriften Verlag GmbH & Co. KG
Helstorfer Straße 7
30625 Hannover
Telefon: +49 [0] 511 5352-0
Telefax: +49 [0] 511 5352-129
post@heise.de
www.heise.de

heise online

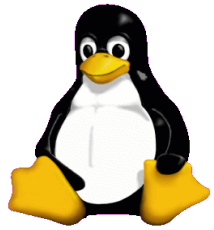
heise Open

c't

Kernel-Log

whoami @ home

fedora
infinity | freedom | voice



Micro-Blogging

- @thleemhuis private/personal stuff German
- @knurd666 Fedora related things English
- @kernellogauthor Kernel-Log topics English
- @kernellog announces new Kernel Logs on heise.de German
- @kernellog2 announces new Kernel Logs on h-online.com English

The next 35 minutes

- quick overview: Linux development model, stable series
- main part: the different areas of the kernel
  - what got improved recently
  - what people are working on
- how to help
- summing up + questions
- there are a lot of more topics I can talk about if you want
  - but I doubt there will be much free time remaining, as the main part is packed with details already

"Use bullet points rarely"

- you
  - won't
    - see
      - many
        - bullet
          - points
            - in
              - this
                - presentation

"Use bullet points rarely"

- you
  - won't
    - see
      - many
        - bullet
          - points
            - in
              - this
                - presentation

If you really think you need something to read, then open you laptop and look at the notes of this presentation: http://bit.ly/lk2010-kernellog

Constant development within 2.6

2.6.26 (14.07.2007) → **2.6.27** (10.10.2008) → **2.6.28** (24.12.2008) → **2.6.29** (24.03.2009) → **2.6.30** (10.06.2009) → **2.6.31** (10.09.2009)

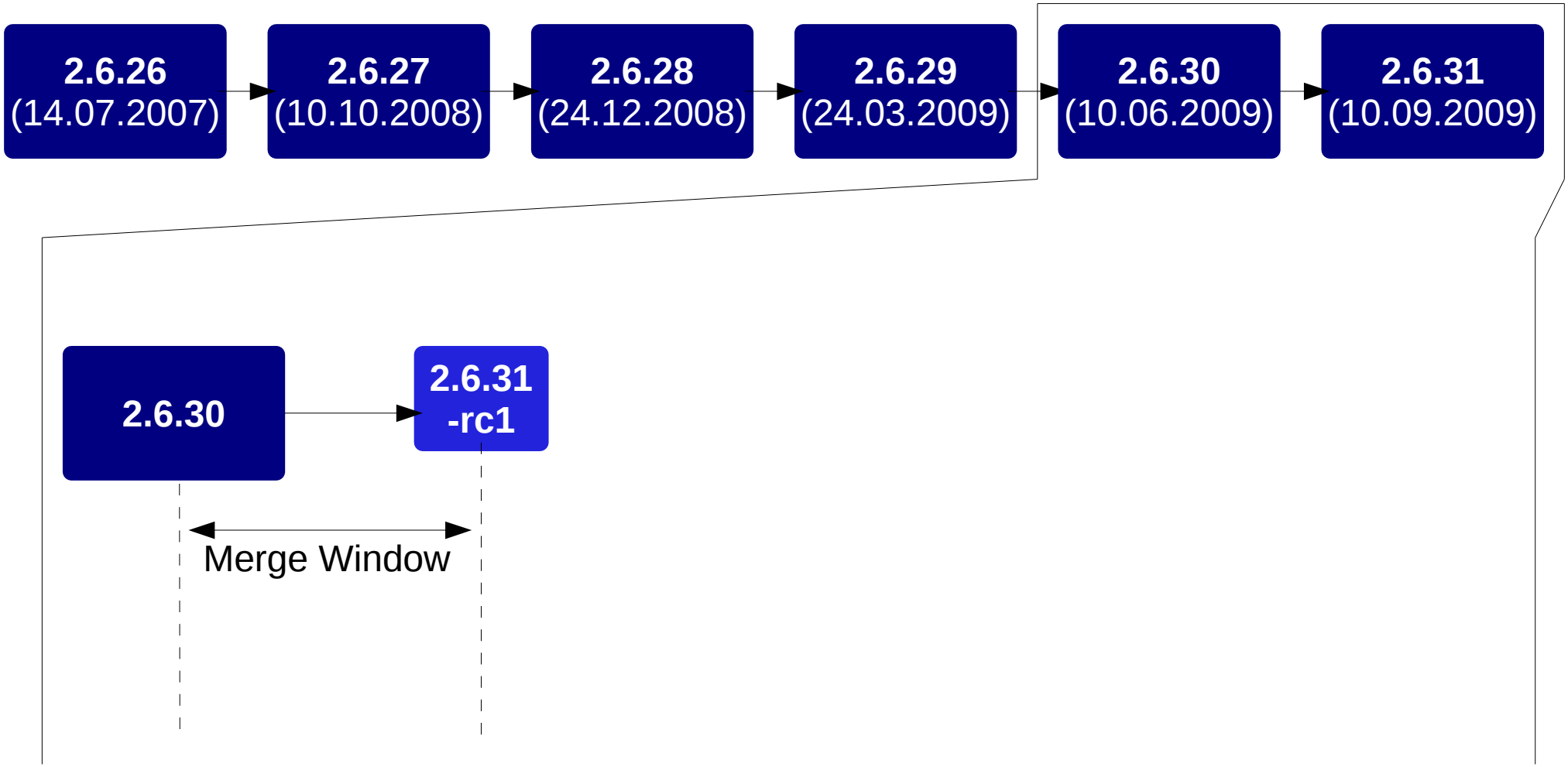
GMANE

From: Linus Torvalds <torvalds <at> linux-foundation.org>
Subject: **Re: From 2.4 to 2.6 to 2.7?**
Newsgroups: **gmane.linux.kernel**
Date: 2008-07-15 02:22:04 GMT (2 years, 9 weeks, 2 days, 16 hours and 41 minutes ago)

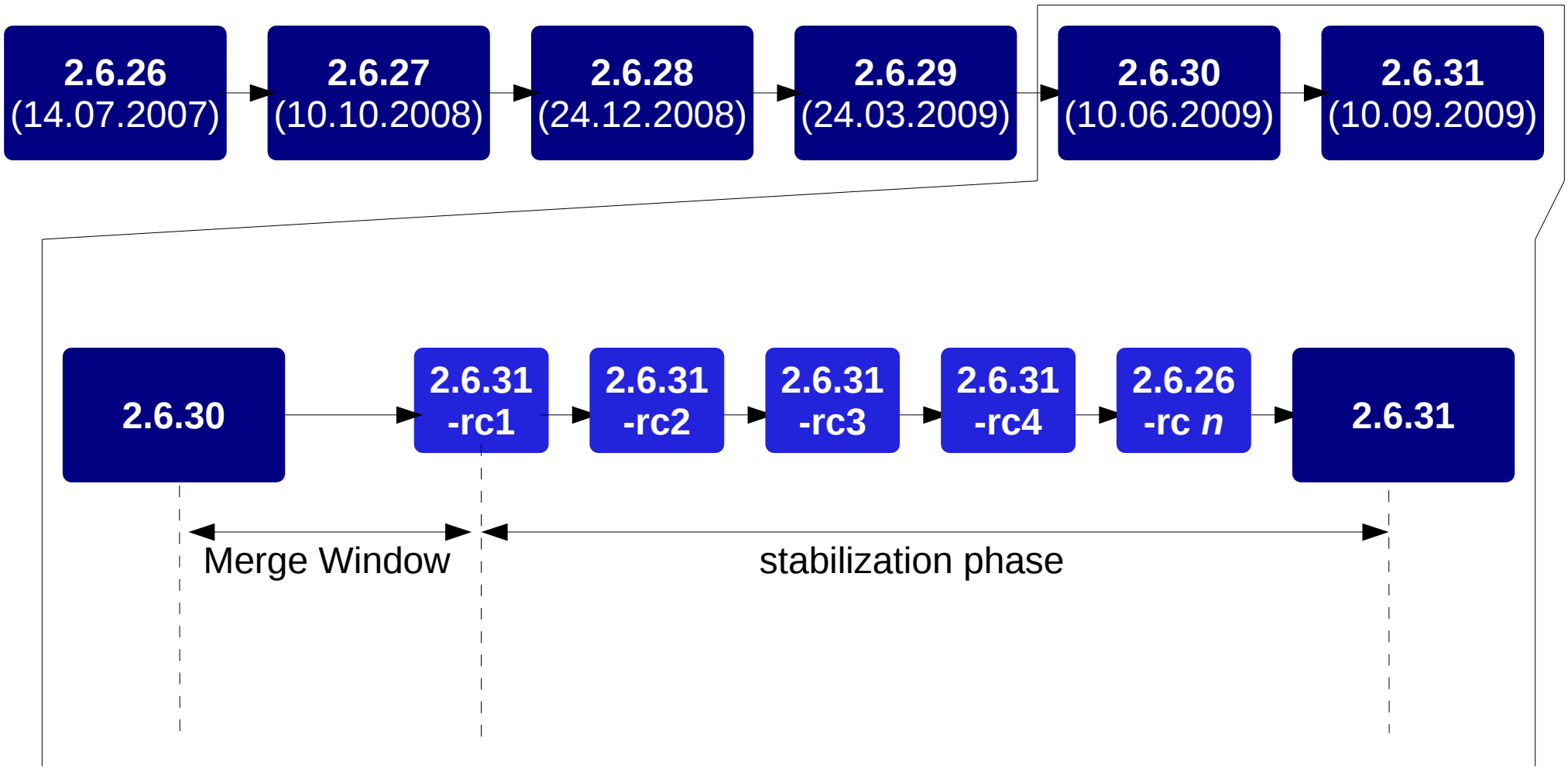
```
On Mon, 14 Jul 2008, Stoyan Gaydarov wrote:
>
> Second I wanted to talk about the linux 2.7.x kernel, whats in the
> making or maybe even not started

Nothing.

I'm not going back to the old model. The new model is so much better that
it's not even worth entertaining as a theory to go back.

That said, I _am_ considering changing just the numbering. Not to go back
to the old model, but because a constantly increasing minor number leads
to big numbers. I'm not all that thrilled with "26" as a number: it's hard
to remember.

So I would not dismiss (and have been thinking about starting) talk about
a simple numbering reset (perhaps yearly), but the old model of 3-year
developement trees is simply not coming back as far as I'm concerned.
```

From the linux-kernel@vger.kernel.org mailing list

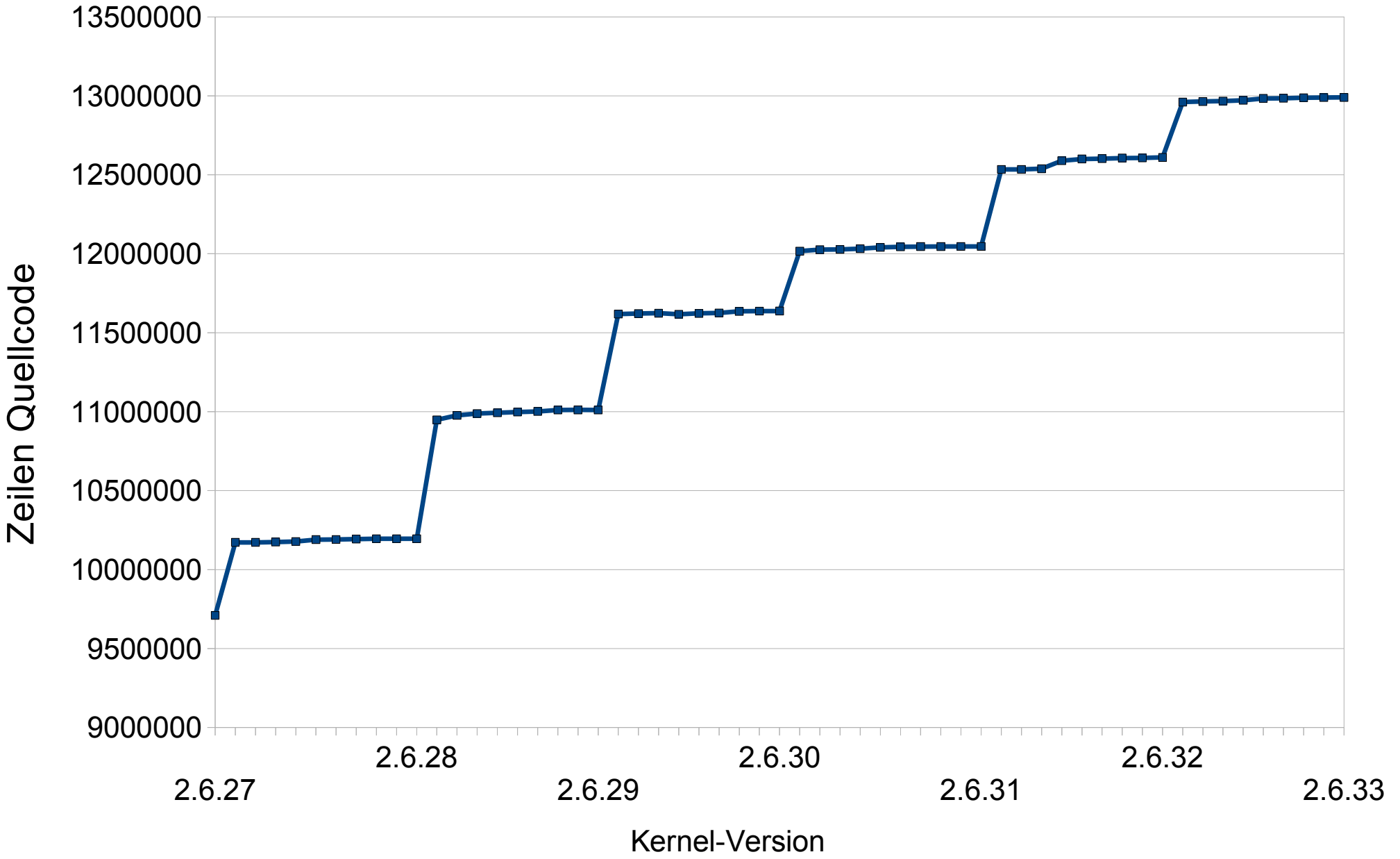
Merge window



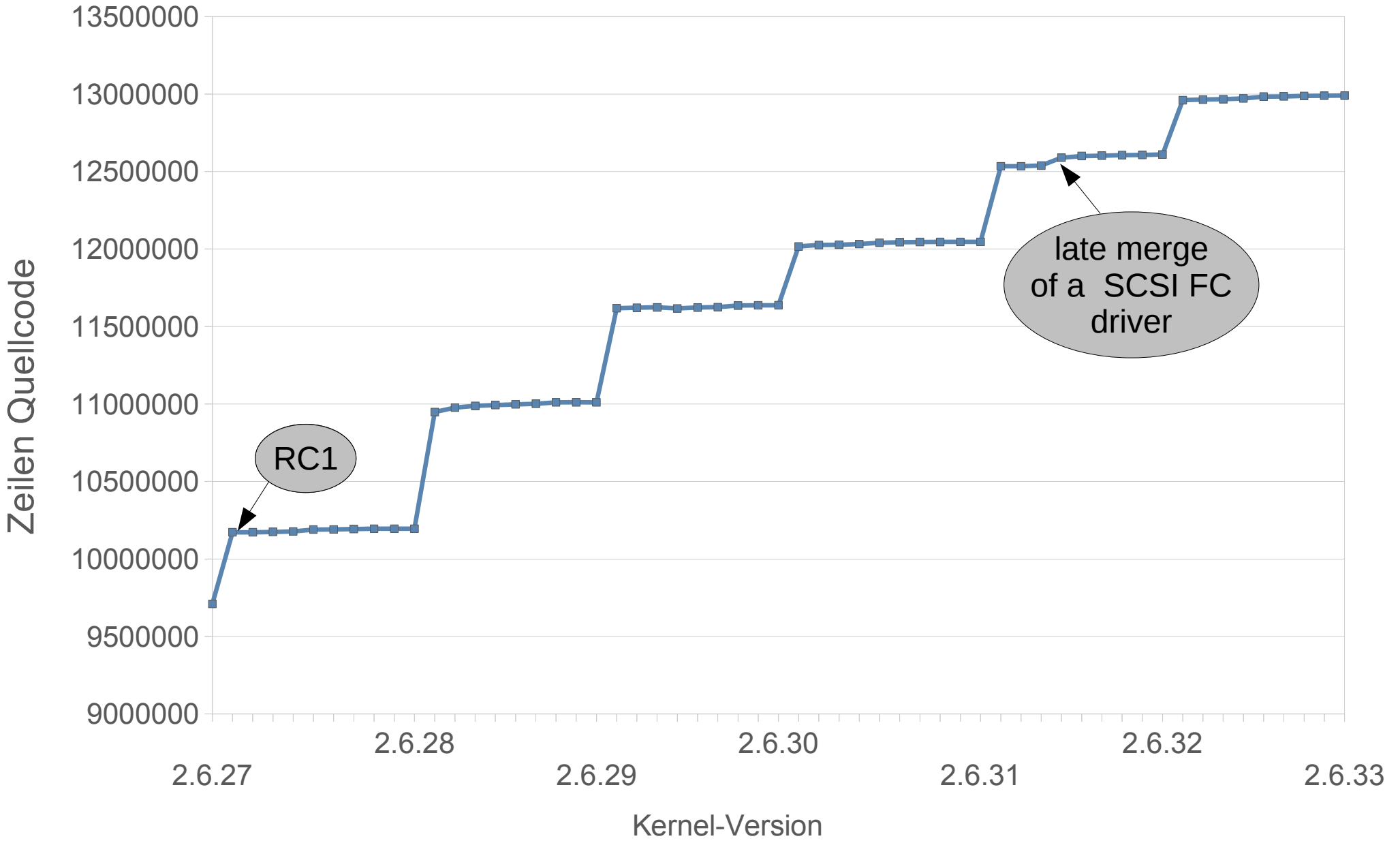
Stabilization phase



Growth


13500000
13000000
12500000
12000000
11500000
11000000
10500000
10000000
9500000
9000000
Zeilen Quellcode
2.6.27
2.6.28
2.6.29
2.6.30
2.6.31
2.6.32
2.6.33
Kernel-Version

Growth


13500000
13000000
12500000
12000000
11500000
11000000
10500000
10000000
9500000
9000000
Zeilen Quellcode
2.6.27
2.6.28
2.6.29
2.6.30
2.6.31
2.6.32
2.6.33
Kernel-Version
RC1
late merge of a SCSI FC driver

Some stats

Linux-Version	Anzahl Dateien[1]	Zeilen Quelltext[2] (Ohne Dokum.)	Entwick-lungs-zeitraum	Anzahl Commits[3]	Diffstat[4]
2.6.31	29111	12046317 (10778469)	92 Tage	10883	8938 files changed, 914135 insertions(+), 504980 deletions(-)
2.6.32	30485	12610030 (11242136)	84 Tage	10998	10315 files changed, 1092987 insertions(+), 530428 deletions(-)
2.6.33	31565	12990041 (11564768)	83 Tage	10871	9673 files changed, 859458 insertions(+), 479452 deletions(-)
2.6.34	32297	13320934 (11861616)	82 Tage	9443	11154 files changed, 609854 insertions(+), 278958 deletions(-)
2.6.35	33316	13545604 (12250679)	77 Tage	9801	8889 files changed, 691927 insertions(+), 467252 deletions(-)

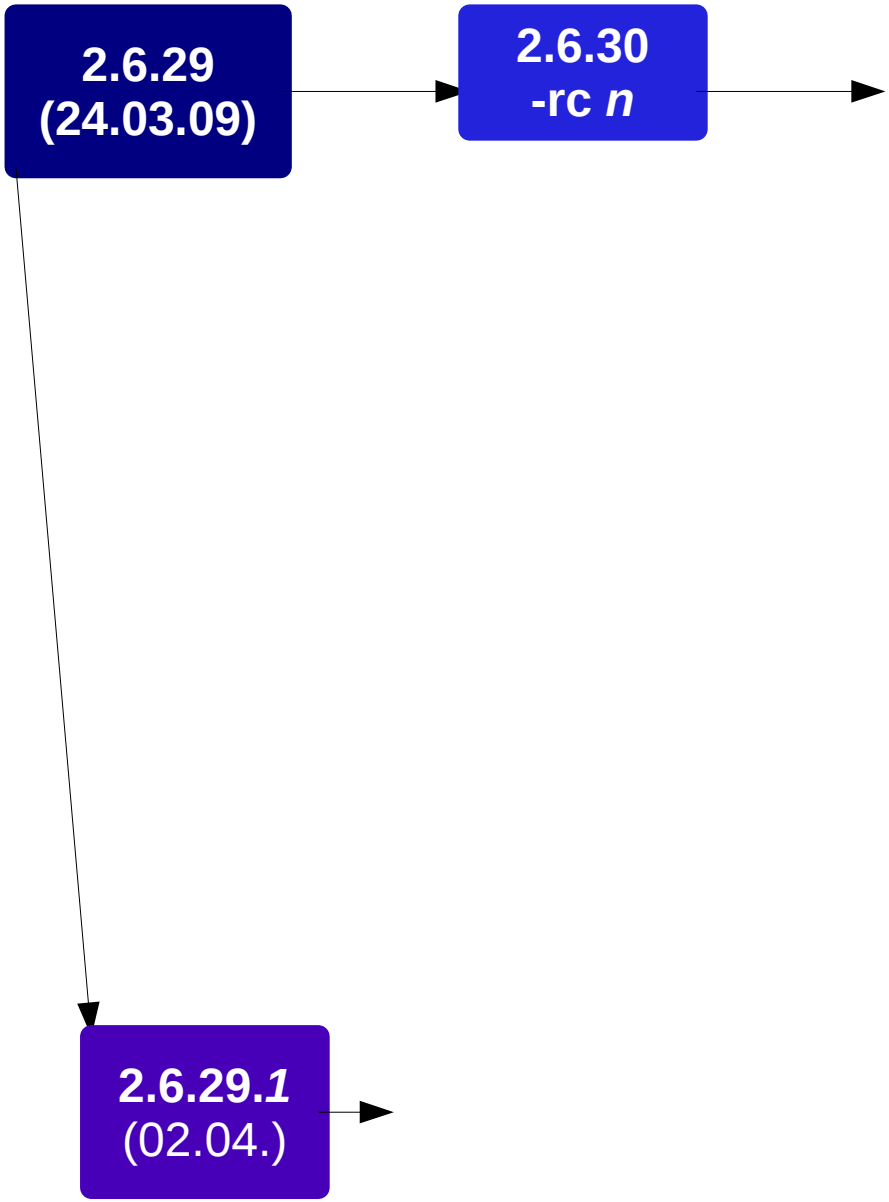
[1] find . -type f -not -regex '\./\.git/.*' | wc -l

[2] find . -type f -not -regex '\./\.git.*' | xargs cat | wc -l (find . -name *.[hcS] -not -regex '\./\.git.*' | xargs cat | wc -l)

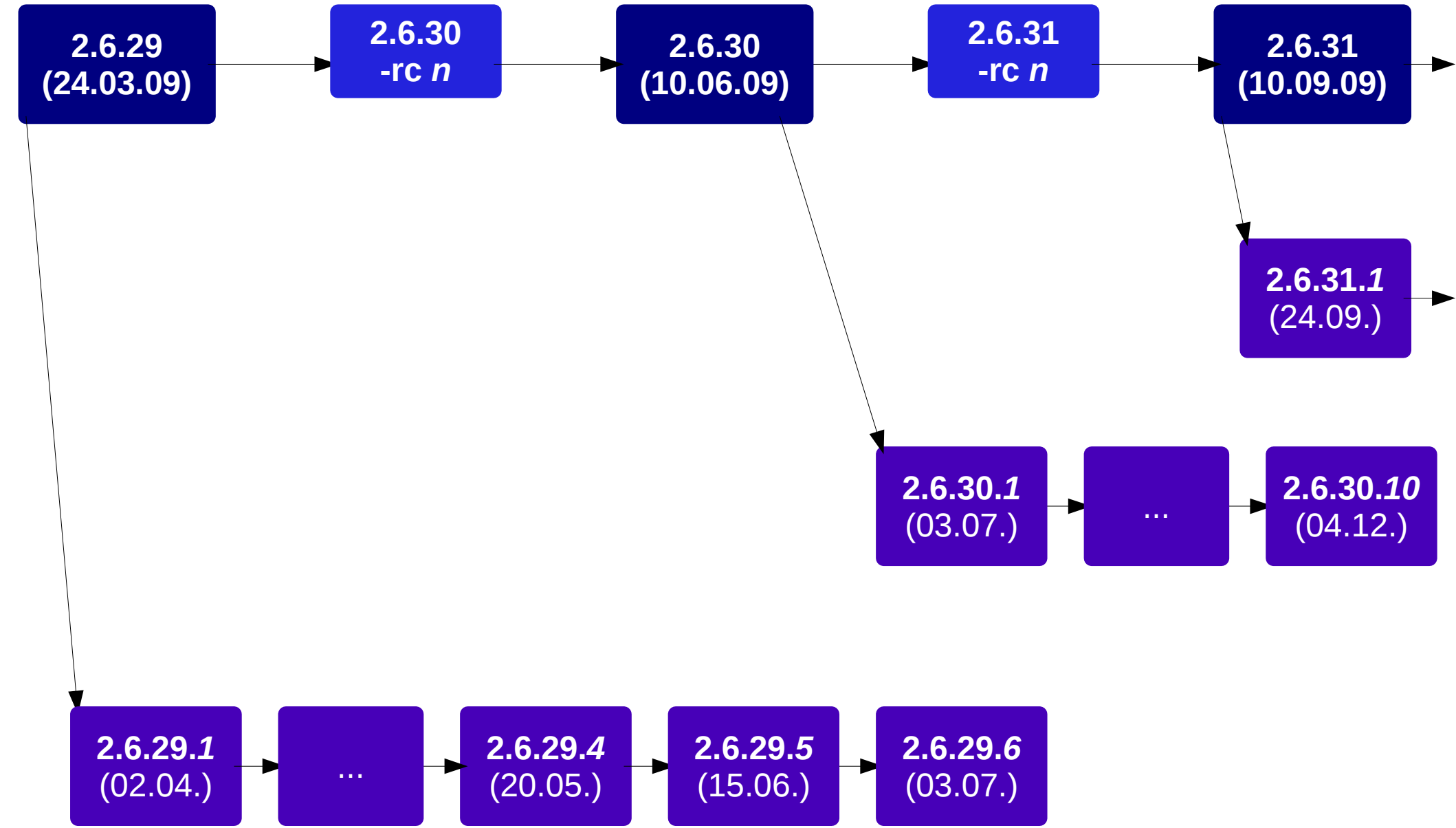
[3] git-log --no-merges --pretty=oneline v2.6.(x-1)..v2.6.(x) | wc -l

[4] git diff --shortstat v2.6.(x-1)..v2.6.(x)

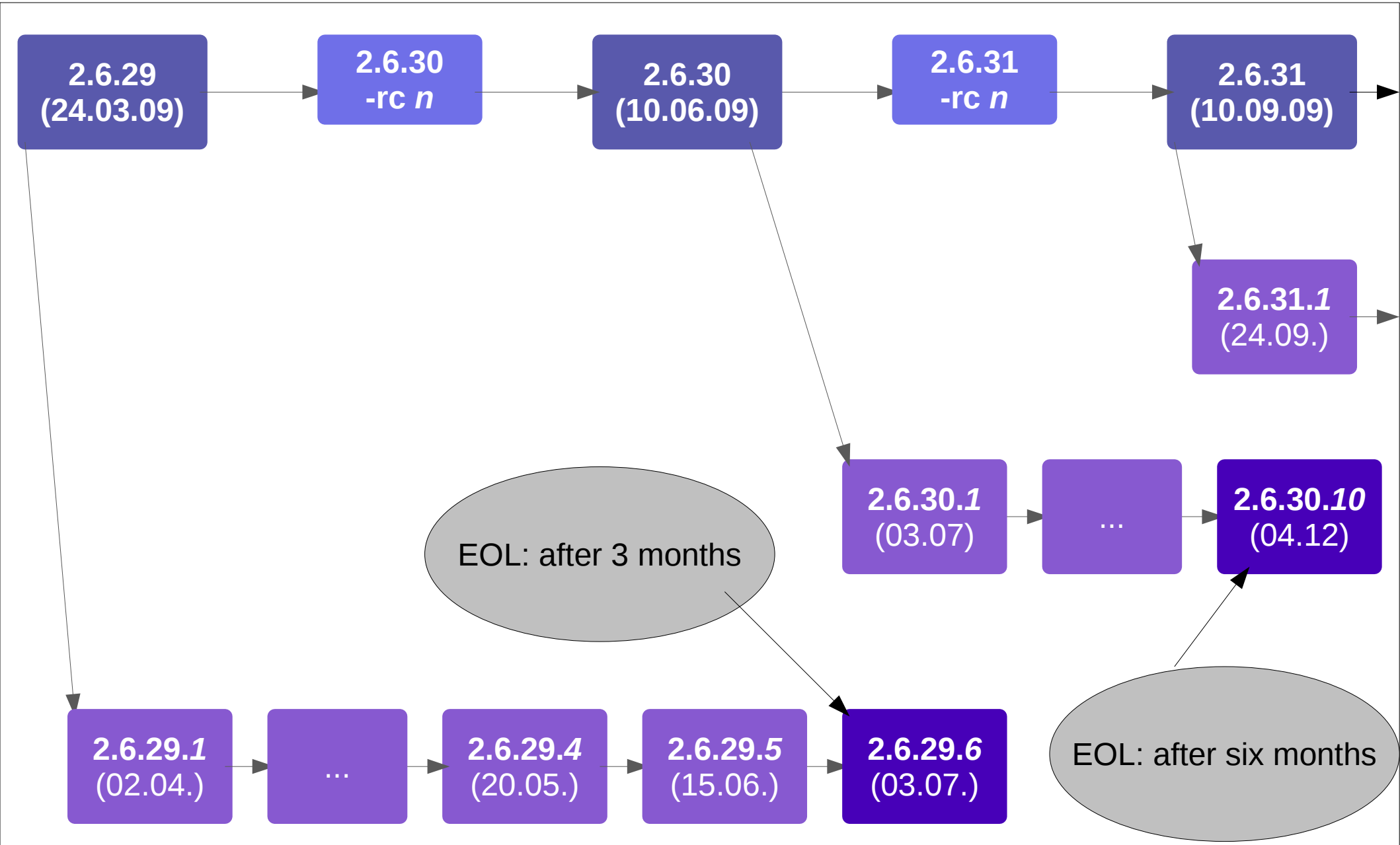
Stable series



Stable series



Stable series



Stable series

[linux/kernel/git/torvalds/linux-2.6.git] / Documentation / stable_kernel_rules.txt

```
Everything you ever wanted to know about Linux 2.6 -stable releases.

Rules on what kind of patches are accepted, and which ones are not, into the
"-stable" tree:

 - It must be obviously correct and tested.
 - It cannot be bigger than 100 lines, with context.
 - It must fix only one thing.
 - It must fix a real bug that bothers people (not a, "This could be a
   problem..." type thing).
 - It must fix a problem that causes a build error (but not for things
   marked CONFIG_BROKEN), an oops, a hang, data corruption, a real
   security issue, or some "oh, that's not good" issue.  In short, something
   critical.
 - New device IDs and quirks are also accepted.
 - No "theoretical race condition" issues, unless an explanation of how the
   race can be exploited is also provided.
 - It cannot contain any "trivial" fixes in it (spelling changes,
   whitespace cleanups, etc).
 - It must follow the Documentation/SubmittingPatches rules.
 - It or an equivalent fix must already exist in Linus' tree (upstream).

```

Stable series: status

- 2.4.xx: not yet dead, but dying
- 2.6.27: growing old: will soon be dropped or frozen deeper
- 2.6.32: current "long term stable release"
- 2.6.34: support stopped recently
- 2.6.35: current

From: Greg KH <gregkh <at> suse.de>
Subject: **Linux 2.6.35.2**
Newsgroups: **gmane.linux.kernel**
Date: 2010-08-13 21:23:13 GMT

I'm announcing the release of the 2.6.35.2 kernel.

All users of the 2.6.35 kernel series must upgrade.

I'm tired of people trying to parse my words like I'm the Federal Reserve Chairman, just go update already. If you use a kernel.org-based kernel, and you aren't updating to the latest -stable updates, well, why are you using a kernel.org kernel in the first place?

Where we are, where we head

The Linux Kernel Archives

Welcome to the Linux Kernel Archives. This is the primary site for the Linux kernel source, but it has much more than just Linux kernels.

Frequently Asked Questions

Protocol	Location
HTTP	http://www.kernel.org/pub/
FTP	ftp://ftp.kernel.org/pub/
RSYNC	rsync://rsync.kernel.org/pub/

Latest Stable Kernel:

2.6.35.5

linux-next:	**next-20100921**	2010-09-21		[Patch]	[View Patch]		[Gitweb]	
mainline:	**2.6.36-rc5**	2010-09-20	[Full Source]	[Patch]	[View Patch]	[View Inc.]	[Gitweb]	[Changelog]
snapshot:	**2.6.36-rc4-git5**	2010-09-20		[Patch]	[View Patch]			
stable:	**2.6.35.5**	2010-09-20	[Full Source]	[Patch]	[View Patch]	[View Inc.]	[Gitweb]	[Changelog]
stable:	**2.6.34.7**	2010-09-13	[Full Source]	[Patch]	[View Patch]	[View Inc.]	[Gitweb]	[Changelog]
stable:	**2.6.33.7**	2010-08-02	[Full Source]	[Patch]	[View Patch]	[View Inc.]	[Gitweb]	[Changelog]
stable:	**2.6.32.22**	2010-09-20	[Full Source]	[Patch]	[View Patch]	[View Inc.]	[Gitweb]	[Changelog]

Graphics hardware: AMD/ATI

Graphics hardware: Intel

Home › Technology › Product Technologies › Graphics ›
Intel® HD Graphics

Intel® HD Graphics

Intel® HD Graphics built into 2010 Intel® Core™ processors[1] provides everyday visual computing on desktop and mobile PCs. Equipped with an advanced video engine, Intel® HD Graphics delivers high-quality, high-definition (HD) video playback, advanced 3D capabilities, and full support for the Microsoft Windows 7* operating system, without the need for a discrete graphics card.

Intel HD Graphics architecture

Delivering flexibility while enabling support for use by future media, Intel HD Graphics dynamically processes graphics and media data. With support for dynamic load balancing, multi-threading, and multi-functional data processing, Intel HD Graphics delivers increased performance for enthusiast-class media capabilities, along with casual and mainstream gaming.

Intel HD Graphics delivers key media and graphics technologies, including the following:

Graphics WOW

The Intel® Core™ i5 processor now comes with Intel® HD Graphics built in.

» Learn more

Graphics hardware: Nvidia

Graphics hardware: Various

YouTube: PDds73yDCNo

KGDB + KDB + KMS the hyper fast fly through

kgdbguy | 7 videos | Subscribe

```
Entering kdb (current=0xf70731b0, pid 7) on processor 1 due to Keyboard Entry
[1]kdb>
[1]kdb> help
Command         Usage                Description
-----------------------------------------------------------
md              <vaddr>              Display Memory Contents, also mdWcN, e.g. md8c1
mdr             <vaddr> <bytes>      Display Raw Memory
mdp             <paddr> <bytes>      Display Physical Memory
mds             <vaddr>              Display Memory Symbolically
mm              <vaddr> <contents>   Modify Memory Contents
go              [<vaddr>]            Continue Execution
rd                                   Display Registers
rm              <reg> <contents>     Modify Registers
ef              <vaddr>              Display exception frame
bt              [<vaddr>]            Stack traceback
btp             <pid>                Display stack for process <pid>
bta             [DRSTCZEUIMA]        Display stack all processes
btc                                  Backtrace current process on each cpu
btt             <vaddr>              Backtrace process given its struct task address
ll              <first-element> <lin Execute cmd for each element in linked list
env                                  Show environment variables
set                                  Set environment variables
help                                 Display Help Message
?                                    Display Help Message
cpu             <cpunum>             Switch to new cpu
[1]more> _
```

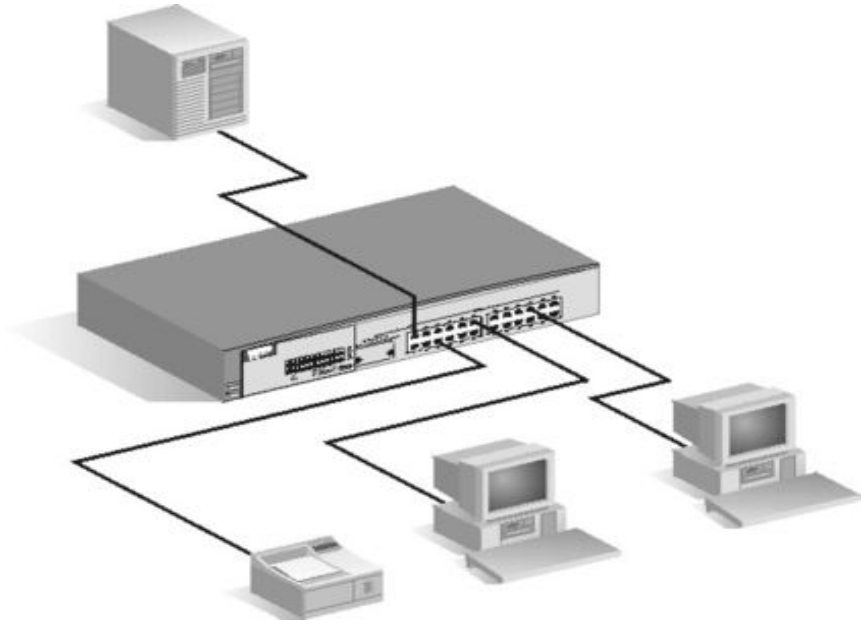
0:16 / 0:59 360p

kgdbguy | September 21, 2009

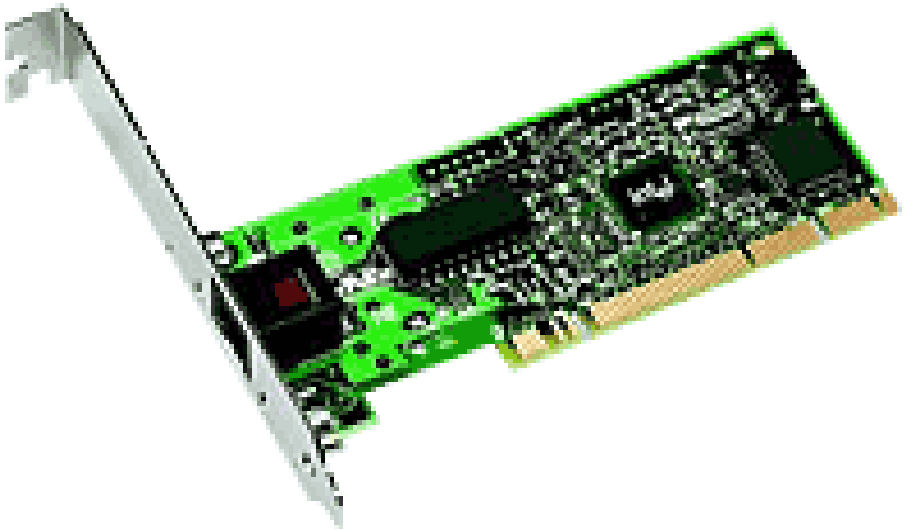
A lightning fast demonstration of using kgdb kdb and kernel mode setting

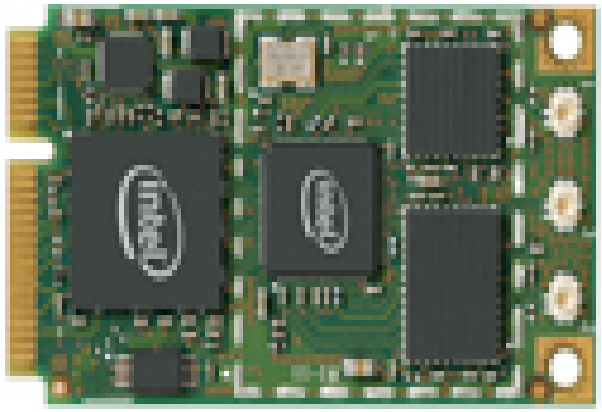
2,279 views

Network




Tue Feb 23, 2:23 PM
Wired Networks
disconnected
Wireless Networks
FloydsCoffee
Disconnect
Available
Brown
Dead Johnny's Grave
Doublescoop Central
dow
GETADRINK
More networks
VPN Connections
Connect to Hidden Wireless Network...
Create New Wireless Network...



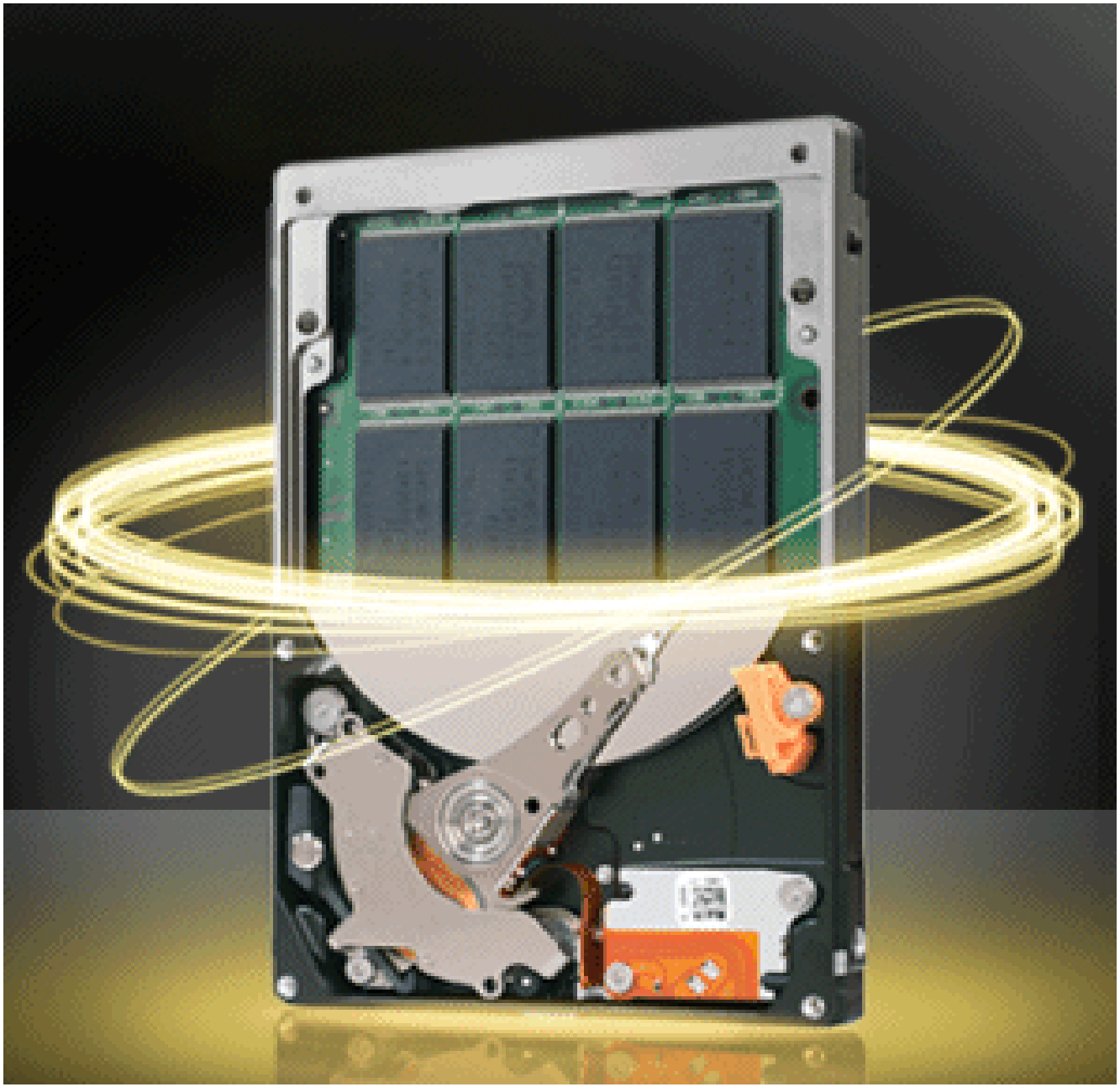


Side note: staging

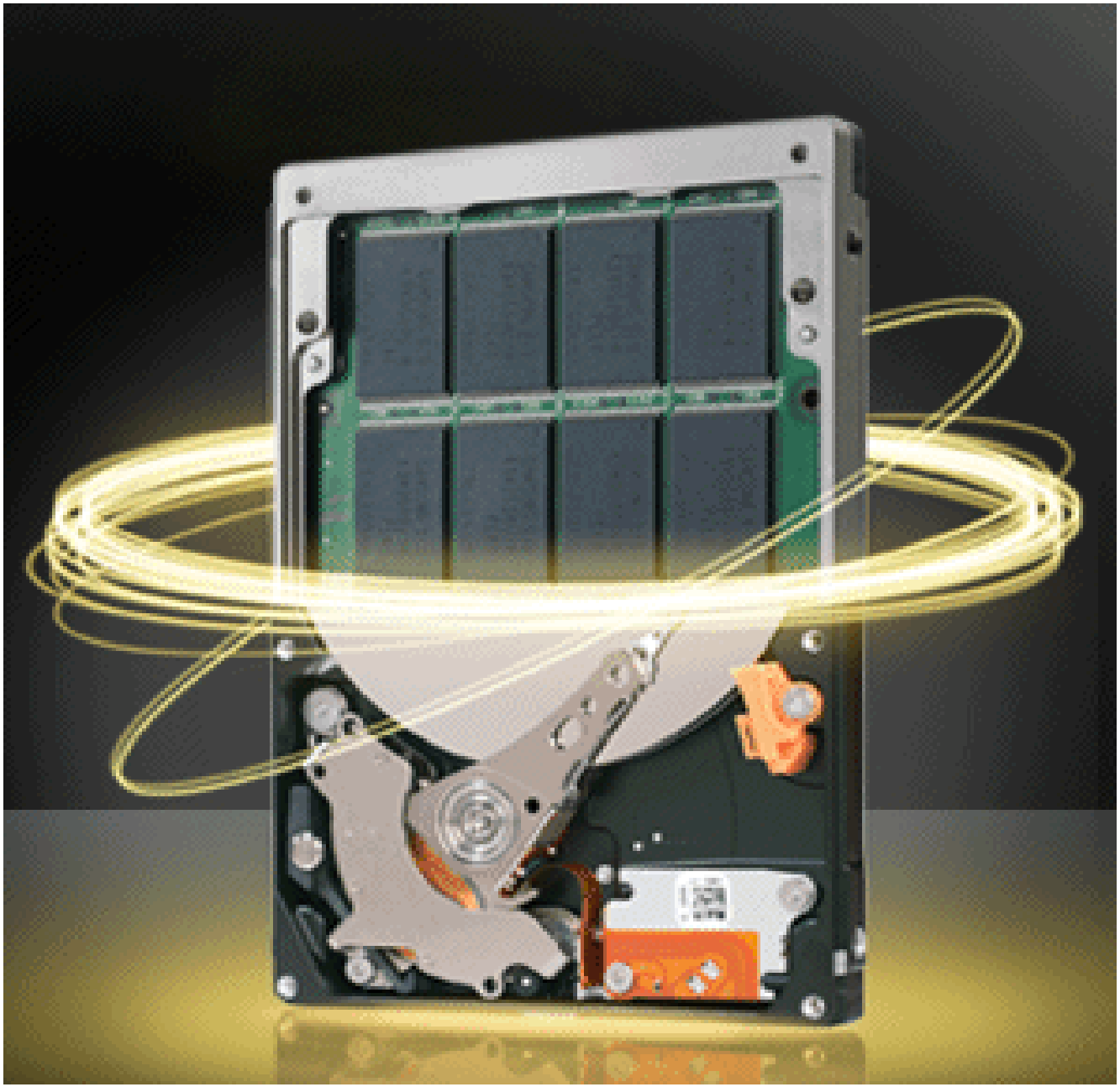
From: Greg KH <greg <at> kroah.com>
Subject: **[ANNOUNCE] linux-staging tree created**
Newsgroups: **gmane.linux.kernel.next**, **gmane.linux.kernel**,
Date: 2008-06-10 19:05:40 GMT

```
PURPOSE

The linux-staging tree was created to hold drivers and filesystems and
other semi-major additions to the Linux kernel that are not ready to be
merged at this point in time.  It is here for companies and authors to
get a wider range of testing, and to allow for other members of the
community to help with the development of these features for the
eventual inclusion into the main kernel tree.

This tree will be included in the daily linux-next builds, and will get
testing by all users of that tree.

The rules of what can be included here is as follows:
        - the code must be released under a Linux kernel-compatible
          license
        - the goal of the developers must be to merge this code into the
          main kernel tree in the near future, but not for the next
          kernel release.
        - the code must build properly on the x86 platform
        - this is not a tree for bugfixes or rewrites of existing kernel
          code, this should be for new features, drivers, and
          filesystems.
        - the patches included must detail exactly what is needed to be
          completed in order for them to be included into the main
          kernel tree.
        - there must be some email address associated with the patch
          that can be used for bug reporting and questions about
          cleanups and testing the code.
```

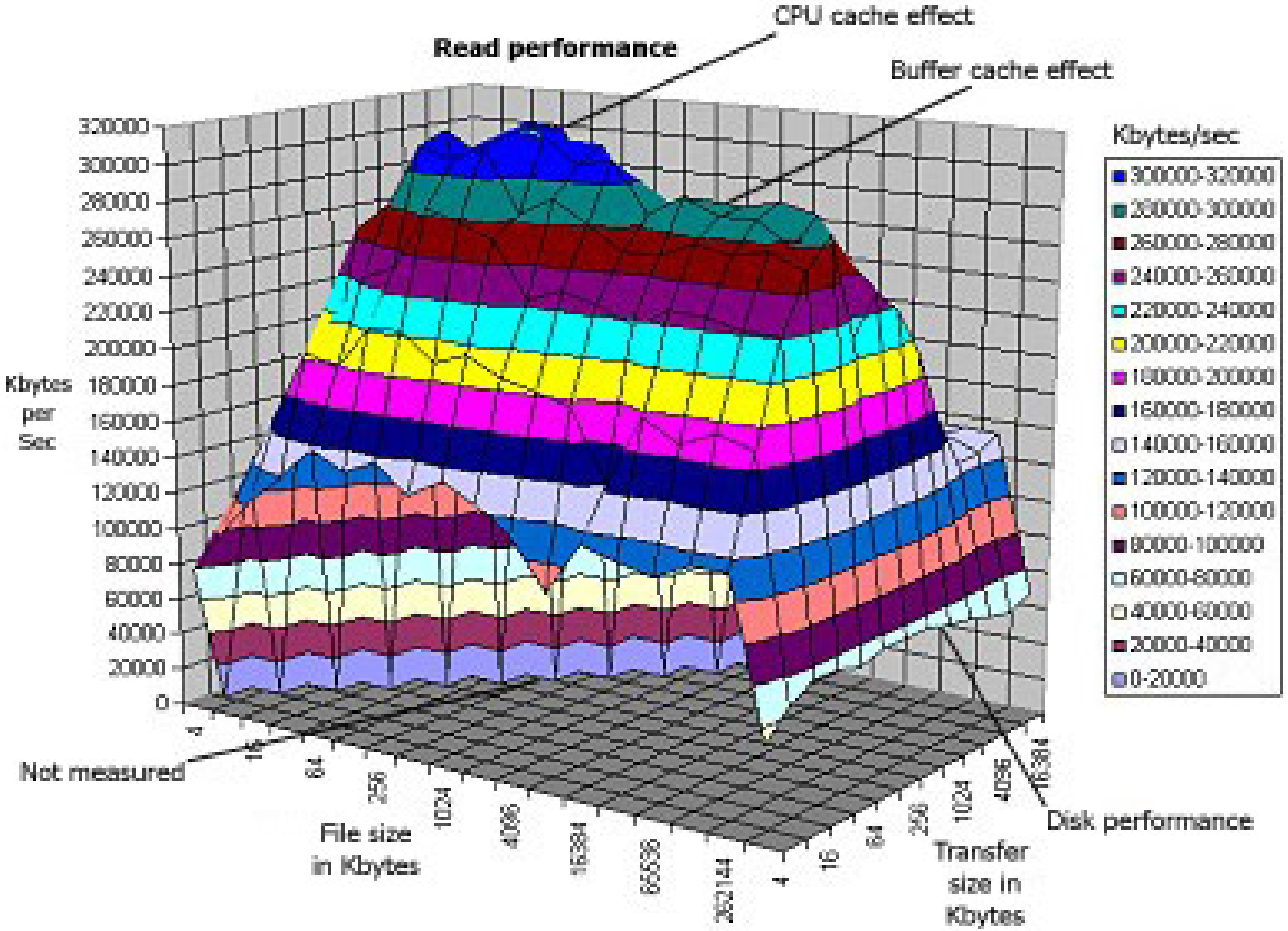
Storage



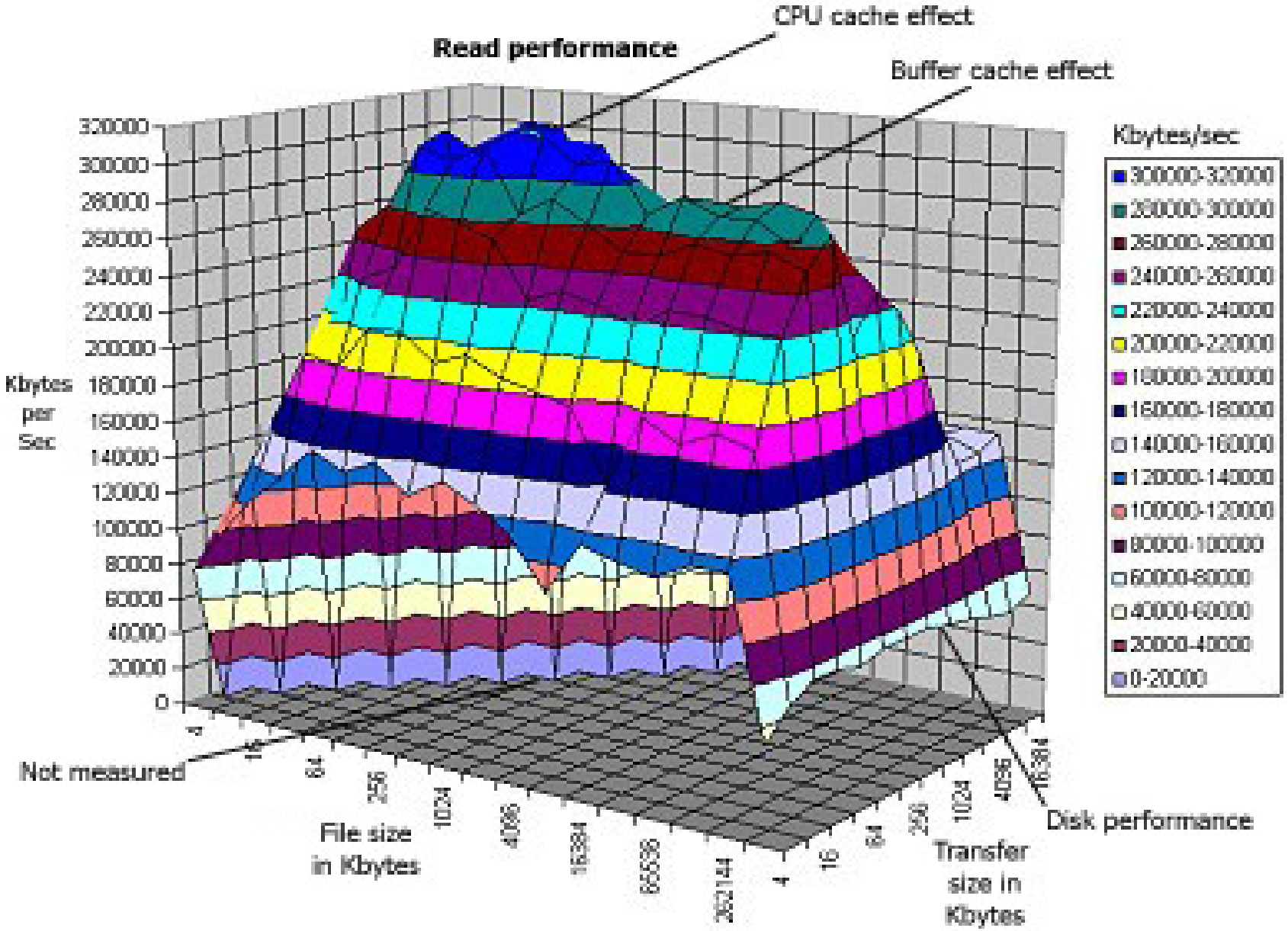
Storage



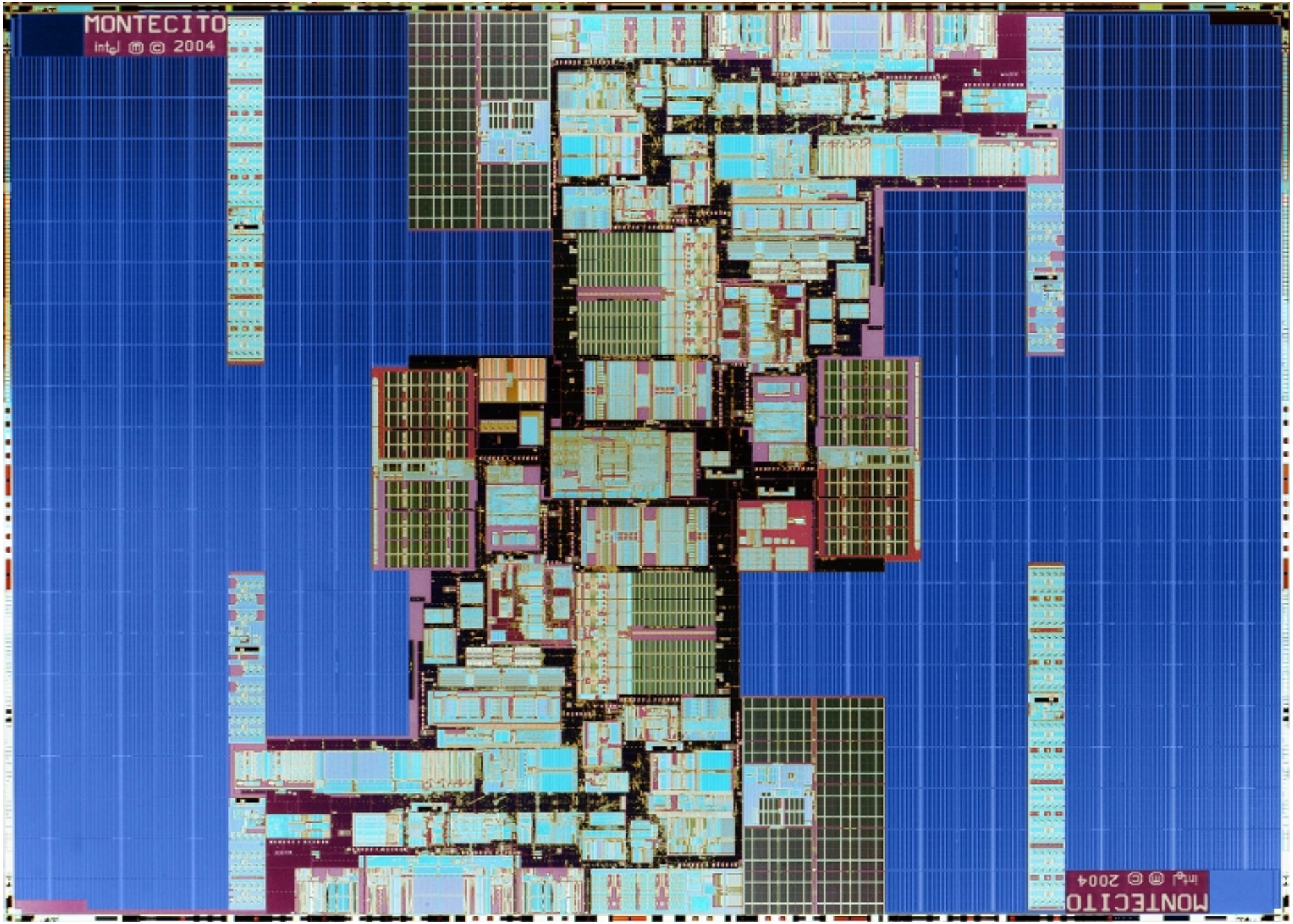
File systems



File systems



Architecture

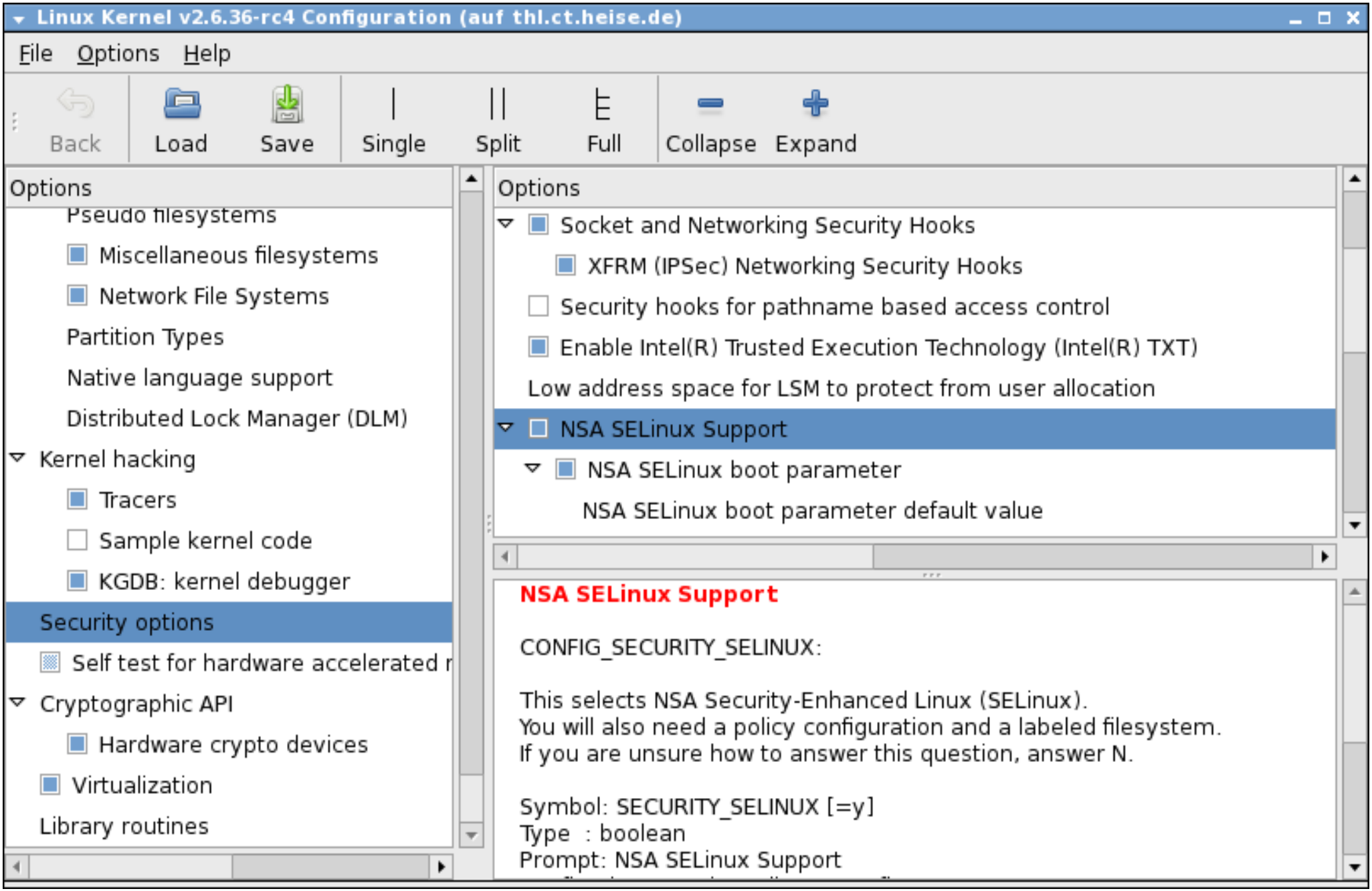


Virtualization

thl@ankh-morpork:~/tmp/tmp

```
[thl@ankh-morpork tmp]$ modinfo kvm
filename:       /lib/modules/2.6.35.4-28.fc14.x86_64/kernel/arch/x86/kvm/kvm.ko
license:        GPL
author:         Qumranet
srcversion:     4819CF9603D4535B68C5ED9
depends:
vermagic:       2.6.35.4-28.fc14.x86_64 SMP mod_unload
parm:           oos_shadow:bool
parm:           ignore_msrs:bool
[thl@ankh-morpork tmp]$ modinfo kvm-intel
filename:       /lib/modules/2.6.35.4-28.fc14.x86_64/kernel/arch/x86/kvm/kvm-intel.ko
license:        GPL
author:         Qumranet
srcversion:     3733E64B0127064F5398119
depends:        kvm
vermagic:       2.6.35.4-28.fc14.x86_64 SMP mod_unload
parm:           bypass_guest_pf:bool
parm:           vpid:bool
parm:           flexpriority:bool
parm:           ept:bool
parm:           unrestricted_guest:bool
parm:           emulate_invalid_guest_state:bool
parm:           ple_gap:int
parm:           ple_window:int
[thl@ankh-morpork tmp]$
```

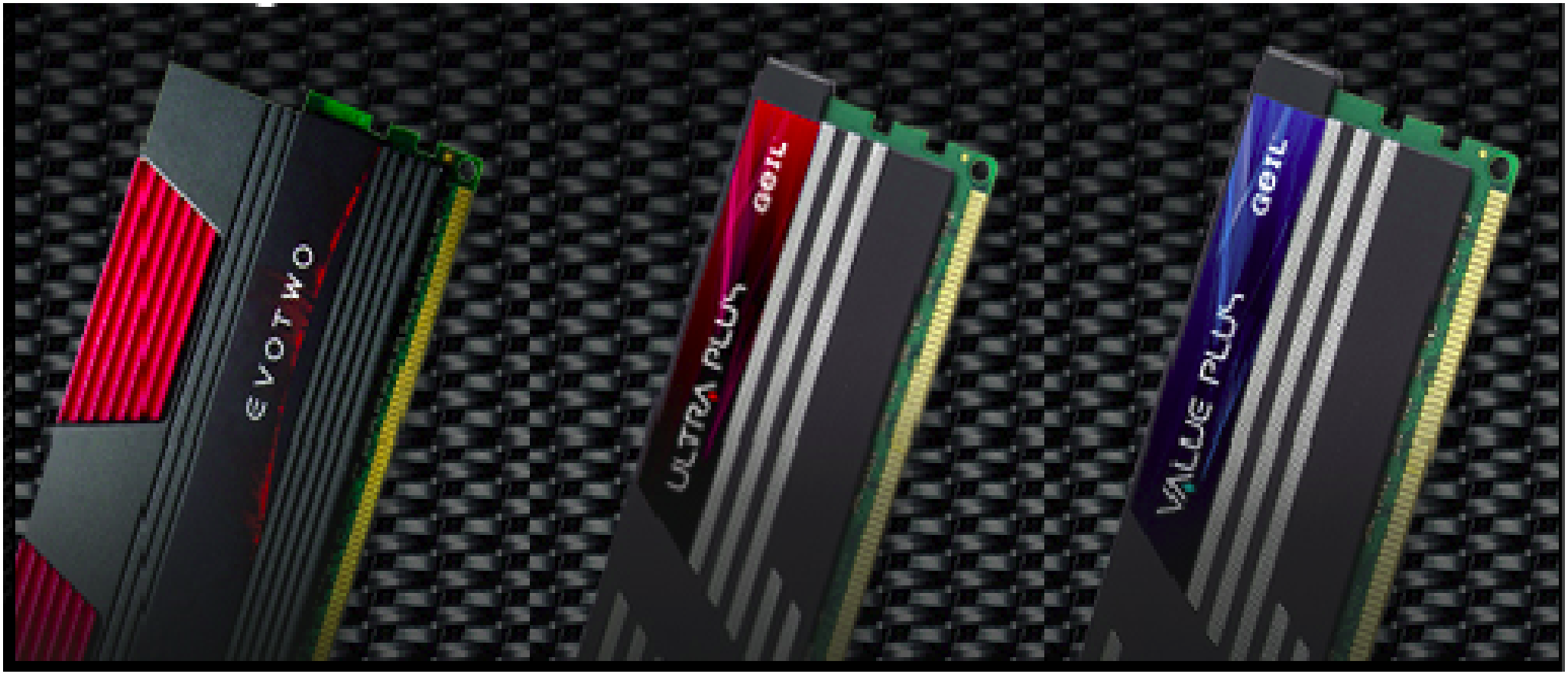
Security


Linux Kernel v2.6.36-rc4 Configuration (auf thl.ct.heise.de)
File Options Help
Back Load Save Single Split Full Collapse Expand
Options
Pseudo filesystems
Miscellaneous filesystems
Network File Systems
Partition Types
Native language support
Distributed Lock Manager (DLM)
Kernel hacking
Tracers
Sample kernel code
KGDB: kernel debugger
Security options
Self test for hardware accelerated r
Cryptographic API
Hardware crypto devices
Virtualization
Library routines
Options
Socket and Networking Security Hooks
XFRM (IPSec) Networking Security Hooks
Security hooks for pathname based access control
Enable Intel(R) Trusted Execution Technology (Intel(R) TXT)
Low address space for LSM to protect from user allocation
NSA SELinux Support
NSA SELinux boot parameter
NSA SELinux boot parameter default value
NSA SELinux Support
CONFIG_SECURITY_SELINUX:
This selects NSA Security-Enhanced Linux (SELinux).
You will also need a policy configuration and a labeled filesystem.
If you are unsure how to answer this question, answer N.
Symbol: SECURITY_SELINUX [=y]
Type : boolean
Prompt: NSA SELinux Support

Tracing/Debugging

```
thl@ankh-morpork:~/tmp/tmp
[thl@ankh-morpork tmp]$ sudo perf record -- /bin/ls /sys/dev
block  char
[ perf record: Woken up 1 times to write data ]
[ perf record: Captured and wrote 0.008 MB perf.data (~333 samples) ]
[thl@ankh-morpork tmp]$ sudo perf report
# Events: 13  cycles
#
# Overhead  Command      Shared Object  Symbol
# ........  .......  .................  ......
#
    50.83%        ls  [kernel.kallsyms]  [k] mem_cgroup_update_file_mapped
    42.27%        ls  [kernel.kallsyms]  [k] trace_hardirqs_off_caller
     6.00%        ls  [kernel.kallsyms]  [k] slab_pad_check
     0.73%        ls  [kernel.kallsyms]  [k] native_write_msr_safe
     0.18%        ls  [kernel.kallsyms]  [k] trace_hardirqs_on


#
# (For a higher level overview, try: perf report --sort comm,dso)
#
[thl@ankh-morpork tmp]$
```

Memory management (MM)

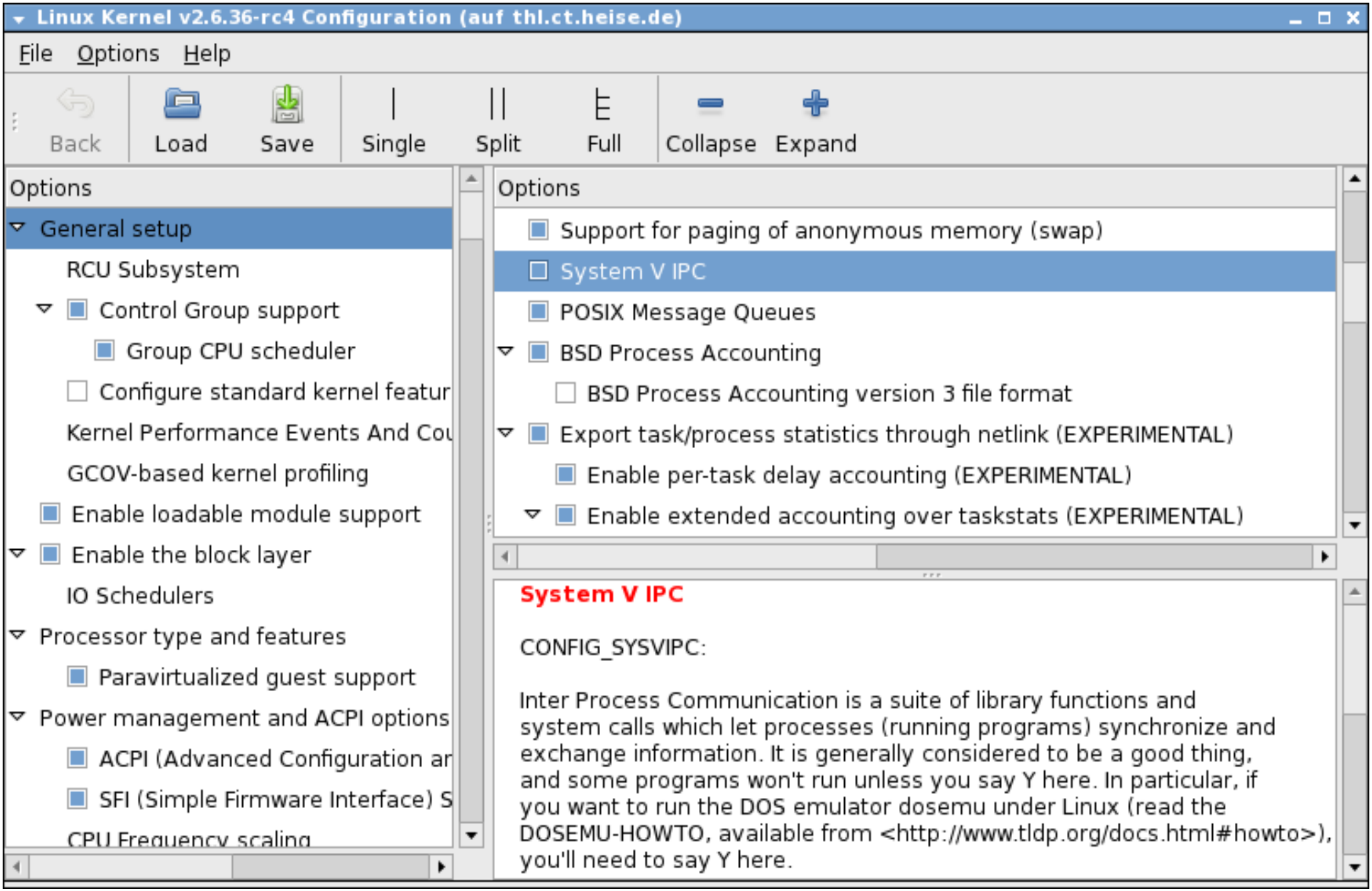


Power management (PM)

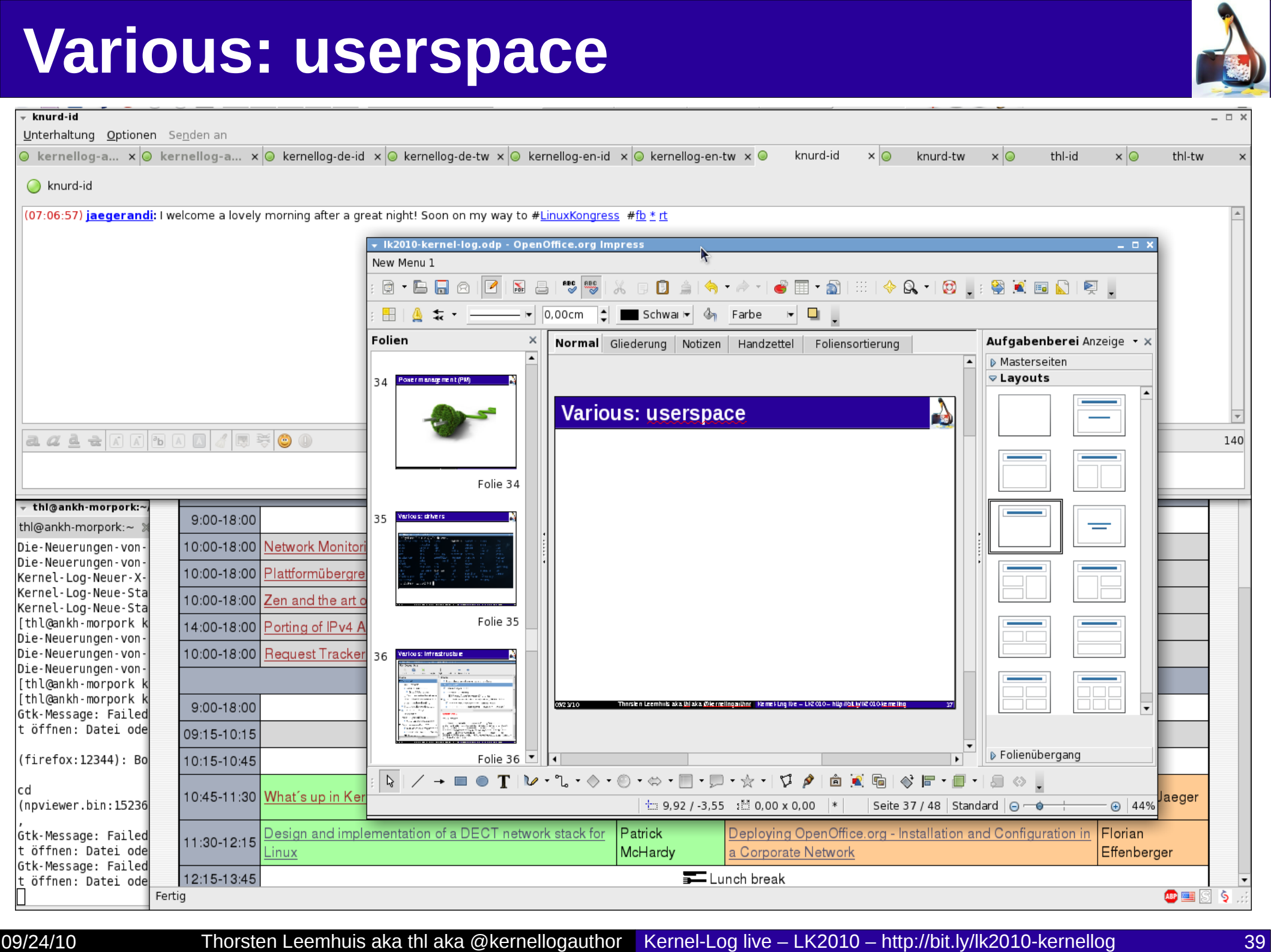
Various: drivers

```
thl@cd-rom:~/linux-2.6
[thl@cd-rom linux-2.6]$ ls drivers/
accessibility  cpufreq   hwmon       Makefile  oprofile   s390       uio
acpi           cpuidle   i2c         mca       parisc     sbus       usb
amba           crypto    ide         md        parport    scsi       uwb
ata            dca       idle        media     pci        serial     vhost
atm            dio       ieee1394    memstick  pcmcia     sfi        video
auxdisplay     dma       ieee802154  message   platform   sh         virtio
base           edac      infiniband  mfd       pnp        sn         vlynq
block          eisa      input       misc      power      spi        w1
bluetooth      firewire  isdn        mmc       pps        ssb        watchdog
cdrom          firmware  Kconfig     mtd       ps3        staging    xen
char           gpio      leds        net       rapidio    tc         zorro
clocksource    gpu       lguest      nubus     regulator  telephony
connector      hid       macintosh   of        rtc        thermal
[thl@cd-rom linux-2.6]$
```

Various: infrastructure



Various: userspace



Staying up2date: Kernel-Log (de)

http://www.heise.de/open/

heise Open Source

News-Archiv Foren Newsletter RSS-Feed

News 7-Tage-News Themen Kernel-Log

Suche

Kernel-Log heise open

heise open › Kernel-Log › Kernel-Log: Alsa-Treiber für die X-Fi, Diskussionen um TuxOnIce

sind Gast · Einloggen | Registrieren

Kernel-Log 20.05.2009 - 14:46

Thorsten Leemhuis

Kernel-Log: Alsa-Treiber für die X-Fi, Diskussionen um TuxOnIce

Artikelanfang
Neue Kernel und Grafiktreiber, Kernel-Log-Staccato

Seite 1 2 »

English version

Der Linux-Kernel wird wohl bald einen Treiber für die X-Fi-Soundkarten von Creative enthalten. Nach langer Ruhephase diskutieren die Kernel-Entwickler wieder über eine Aufnahme von TuxOnIce.

Alsa- und Kernel-Entwickler Takashi Iwai hat von Creative einen Open-Source-Treiber für PCI-Soundkarten der X-Fi-Serie erhalten, den er als gut genug einschätzt, um ihn in das Alsa-Treiberpaket und den Linux-Kernel aufzunehmen. Er habe den snd-ctxfi genannte Treiber aber mangels X-Fi-Soundkarten nicht testen können und rief daher Besitzer der Karte auf, den Treiber auszuprobieren – das machten in den vergangenen Tagen bereits einige Anwender und lieferten reichlich Feedback.

Die Chancen stehen daher nicht schlecht, dass der neue Treiber in die nächste Version von Alsa sowie den Linux-Kernel 2.6.31 einzieht. Damit dürfte eine längere Odyssee um Linux-Treiber für die X-Fi-Soundkarten dann vermutlich ihr Ende finden. Anfangs hatte Creative mehrfach proprietäre Treiber versprochen, ohne welche zu liefern. 2007 erschienen dann Vorabversionen des Treiber – die hatten aber so viel raue Ecken und Kanten, dass sie sich kaum sinnvoll einsetzen ließen. Anfang 2008 erschien dann plötzlich und unerwartet ein Open-Source-Treiber für das im Linux-Bereich kaum mehr genutzte Open Sound System (OSS); es hieß zudem, dass Creative Open-Source-Entwickler mit Dokumentation für die Soundchips versorgen wollte. Danach wurde es dann aber

Veranstaltungen
LinuxTag 2009: Wirtschaftskrise als Chance für Open Source
Bericht von den Chemnitzer Linux-Tagen 2009

Service
Open-Source-Dienstleister
Open-Source-Lösungen für Unternehmen

Aktuelle Themen

Sun Web Space Server 10.0

GlassFish Web Space Server

Mit dem Glassfish Web Space Server von Sun lassen sich Portale für verschiedenste Anforderungen realisieren. mehr...

Feintuning – Die Neuerungen von Linux 2.6.30

Ein ganzer Batzen der Änderungen von Linux 2.6.30 dreht sich um Dateisysteme und Datenspeicherung. Es gibt aber noch reichlich andere Neuerungen wie einen schnellerer Startvorgang, effizientere Kompression sowie hunderte neue und überarbeitete Treiber. mehr...

Vorneweg – Die Neuerungen von Fedora 11

fedora

Fedora 11 ("Leonidas") glänzt mit aktualisierter Software, neuem Design und einer Reihe technischer Verbesserungen. Dabei zeigt sich Fedora wie üblich als Vorreiter: Vieles

Staying up2date: Kernel-Log (en)

http://www.h-online.com/open/

Staying up2date: Linux Weekly News

http://lwn.net/

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Weekly edition
Current [$]: FreedomHEC • Python and ipaddr.py • Merge window • Chunkfs • NixOS • Cygnal • ...
Previous: Video codecs • OpenMoko • PiTiVi • pahole • Kernel design patterns • ...

Printable page

Welcome to LWN.net

LWN featured content

[$] What ever happened to chunkfs?
[Kernel] Posted Jun 17, 2009 12:23 UTC (Wed) by jake

Guest author Valerie Aurora is frequently asked about chunkfs, which is a prototype file system implementing "repair-driven" file system features. Her answer: "Chunkfs works, the overhead is reasonable, and it is only practical if it is part of the file system design from the beginning, not tacked on after the fact. I just need to write up the paper summarizing all the data." That paper is now available, subscribers only, from this week's Kernel page.

Full Story (comments: 25)

[$] FreedomHEC Taipei 2009
[Front] Posted Jun 15, 2009 15:31 UTC (Mon) by corbet

FreedomHEC (Freedom Hardware Engineer's Conference) Taipei was held June 10 and 11 in, unsurprisingly, Taipei, Taiwan. The event, sponsored by the governmental Institute for Information Industry, followed the huge Computex conference in the hope of attracting hardware developers who are interested in supporting Linux. LWN Executive Editor Jonathan Corbet spoke at FreedomHEC; the following report (subscribers only) gives a look at the conference and what it accomplished.

What is LWN.net?
LWN.net is a reader-supported news site dedicated to producing the best coverage from within the Linux and free software development communities. See the LWN FAQ for more information, and please consider subscribing to gain full access and support our activities.

Current news

OpenSource World Unlocks the Word on Keynote Speakers (Linux Journal)
[Press] Posted Jun 19, 2009 23:05 UTC (Fri) by ris

Linux Journal looks forward to the OpenSource World conference, previously known as LinuxWorld. "Keynote speakers are always a highlight of any conference, and OpenSource World is no exception. The expo's main speaker will be California Secretary of State Debra Bowen, who is known to the Open Source community for understanding and advocating Open Source software. Additionally, there will be a keynote panel, "Assessing the Real Market Opportunities and Obstacles for Making Cloud Computing Mainstream," lead by CloudWorld conference chairman Jeffrey Kaplan and including discussion and debate by panelists Joe Weinman of AT&T Business Solutions, Sam Charrington of Appistry, and James Urquhart of Cisco."

Comments (none posted)

openSUSE Factory is Now Open

Staying up2date: Weather Forecast

http://www.linuxfoundation.org/collaborate/lwf

Staying up2date: Kernelnewbies

http://kernelnewbies.org/LinuxChanges

LinuxChanges

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LinuxChanges

List of the major changes done to each Linux kernel release. Other places to get news about the Linux kernel are LWN kernel status, LWN list of API changes in 2.6, KernelPodcast or www.lkml.org. List of changes of older releases can be found at Linux26Changes. If you're going to add something here look first at LinuxChangesRules!

Discuss the latest Linux kernel changes on the Kernelnewbies web forum.

Linux 2.6.35 has been released on 1 Aug, 2010.

Summary: Linux 2.6.35 includes support for transparent spreading of incoming network load across CPUs, Direct-IO support for Btrfs, an new experimental journal mode for XFS, the KDB debugger UI based on top of KGDB, improvements to 'perf', H.264 and VC1 video acceleration in Intel G45+ chips, support for the future Intel Cougarpoint graphic chip, power management for AMD Radeon chips, a memory defragmentation mechanism, support for the Tunneling Protocol version 3 (RFC 3931), support for multiple multicast route tables, support for the CAIF protocol used by ST-Ericsson products, support for the ACPI Platform Error Interface, and many new drivers and small improvements.

Note: Details on architecture-specific and driver changes have been moved to this page: Linux_2_6_35-DriversArch

1. Prominent features (the cool stuff)
    1. Transparent spreading of incoming network traffic load across CPUs
    2. Btrfs improvements
    3. XFS Delayed logging
    4. KDB kernel debugger frontend
    5. perf improvements
    6. Graphic improvements
    7. Memory compaction
    8. Support for multiple multicast route tables
    9. L2TP Version 3 (RFC 3931) support
    10. CAIF Protocol support
    11. ACPI Platform Error Interface support
2. Various core changes
3. Filesystems
4. Block
5. Memory management
6. Networking
7. Tracing/Profiling
8. Crypto
9. Virtualization
10. MD
11. CPU scheduler
12. Cpufreq/cpuidle
13. Security

Test and Report bugs!

http://bugzilla.kernel.org/

Kernel Bug Tracker - Main Page version 3.2.2

Home | New | Search | Find | Reports | New Account | Log In

This is the Kernel Tracker system (based on Bugzilla) for posting bugs against the mainline Linux kernels(not distribution kernels). If you have problems or questions related to the Kernel Tracker itself, please contact the bugme admin or submit a bug report against it. You can find the answer to some of your questions in the FAQ page too. All new categories are created owned by "virtual users". You may also want to read the Kernel Bug Tracker User's Guide to find out more about Kernel Bug Tracker and how to use it.

Most common actions:

Search existing bug reports
Enter a new bug report
Summary reports and charts

Login:
Password:

Restrict this session to this IP address (using this option improves security)

Login [Forgot my Password]

Open a new Kernel Bug Tracker account

Add to Sidebar (requires a Mozilla browser like Mozilla Firefox)
Install the Quick Search plugin (requires Firefox 2 or Internet Explorer 7)

Enter a bug # or some search terms:
Find [Help]

Actions:Home | New | Search | Find | Reports | New Account | Log In

Test -rc Kernels!

http://bit.ly/tytso-help-testing

From: Ted Ts'o <tytso <at> mit.edu>
Subject: **Re: stable? quality assurance?**
Newsgroups: **gmane.linux.kernel**
Date: 2010-07-11 13:16:40 GMT (9 weeks, 4 days, 5 hours and 26 minutes ago)

On Sun, Jul 11, 2010 at 09:18:41AM +0200, Martin Steigerwald wrote:
>
> I still actually ***use*** my machines for something else than hunting patches
> for kernel bugs and on kernel.org it is written "Latest ***Stable*** Kernel"
> (accentuation from me). I know of the argument that one should use a
> distro kernel for machines that are for production use. But frankly, does
> that justify to deliver in advance known crap to the distributors? What
> impact do partly grave bugs reported on bugzilla have on the release
> decision?

So I tend to use -rc3, -rc4, and -rc5 kernels on my laptops, and when I find bugs, I report them and I help fix them. If more people did that, then the 2.6.X.0 releases would be more stable. But kernel development is a volunteer effort, so it's up to the volunteers to test and fix bugs during the rc4, -rc5 and -rc6 time frame. But if the work tails off, because the developers are busily working on new features for the new release, then past a certain point, delaying the release reaches a point of diminishing returns. This is why we do time-based releases.

It is possible to do other types of release strategies, but look at Debian Obsolete^H^H^H^H^H^H^H^H Stable if you want to see what happens if you insist on waiting until all release blockers are fixed (and even with Debian, past a certain point the release engineer will still just reclassify bugs as no longer being release blockers --- after the stable release has slipped for months or years past the original projected release date.)

So if you and others like you are willing to help, then the quality of the Linux kernels can continue to improve. But simply complaining about it is not likely to solve things, since threating to not be willing to upgrade kernels is generally not going to motivate many, if not most, of the volunteers who work on stablizing the kernel.

Regression Reports

Subject	From	Date	Size
2.6.30-rc8-git4: Reported regressions 2.6.28 -> 2.6.29	Rafael J. Wysocki	07.06.2009...	13KB
[Bug #12490] ath5k related kernel panic in 2.6.29-rc1	Rafael J. Wysocki	07.06.2009...	4KB
[Bug #12765] i915 VT switch with AIGLX causes X lock up	Rafael J. Wysocki	07.06.2009...	4KB
[Bug #12681] s2ram: fails to wake up on Acer Extensa 4220 (SMP disabled)	Rafael J. Wysocki	07.06.2009...	4KB
[Bug #12705] X200: Brightness broken since 2.6.29-rc4-58-g4c098bc	Rafael J. Wysocki	07.06.2009...	4KB
[Bug #12909] boot/kernel init duration regression from 2.6.28	Rafael J. Wysocki	07.06.2009...	3KB

Rafael J. Wysocki

reply | forward | archive | junk

2.6.30-rc8-git4: Reported regressions 2.6.28 -> 2.6.29 07.06.2009 12:02

Andrew Morton, Linus Torvalds, Natalie Protasevich, Kernel Testers List, Network Development, Linux ACPI, **more**

```
This message contains a list of some regressions introduced between 2.6.28 and
2.6.29, for which there are no fixes in the mainline I know of.  If any of them
have been fixed already, please let me know.

If you know of any other unresolved regressions introduced between 2.6.28
and 2.6.29, please let me know either and I'll add them to the list.
Also, please let me know if any of the entries below are invalid.

Each entry from the list will be sent additionally in an automatic reply to
this message with CCs to the people involved in reporting and handling the
issue.


Listed regressions statistics:

  Date          Total  Pending  Unresolved
  ----------------------------------------
  2009-06-07      169       27          25
  2009-05-31      167       27          26
  2009-05-25      165       27          25
  2009-05-17      162       27          25
  2009-04-26      160       29          27
  2009-04-06      142       37          31
  2009-03-21      128       29          26
  2009-03-14      124       36          32
  2009-03-03      108       33          28
```

Finally ()

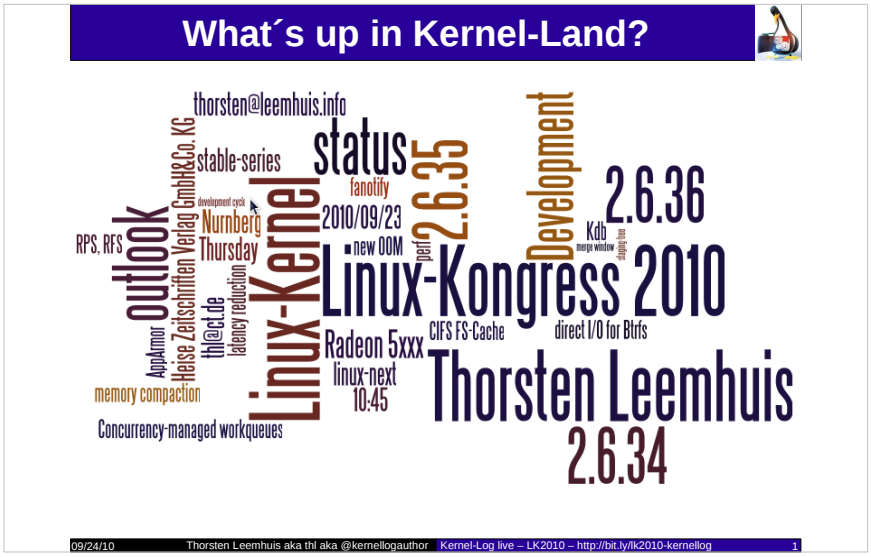
- 2.6.35 (released in August)
  - RPS, RFS, memory compaction, direct I/O for Btrfs, Kdb, perf
- 2.6.36 in mid October
  - AppArmor, fanotify, Concurrency-managed workqueues, new OOM, latency reduction, CIFS FS-Cache
  - improved hardware support thanks to new and improved drivers
- 2.6.37 for the start of next year
- still a lot happening, as there still is a lot to do
  - but yes, maybe things are slowing down a bit
- support for 2.6.27 might soon stop (and 2.4 as well)
- always upgrade to the latest stable releases
  - or use a kernel from a distribution to let the distributor fix all security bugs for you

Wanna know more about these? Ask!

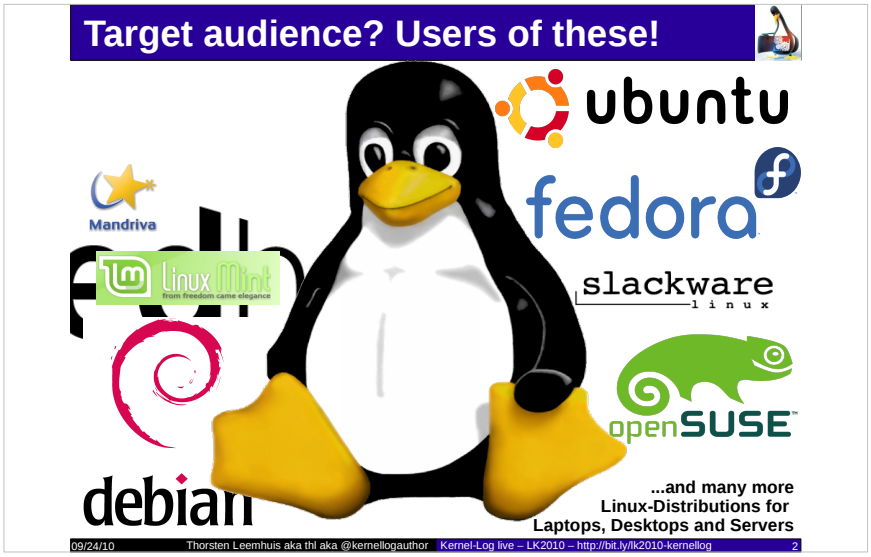
- LWN: Who writes the kernel
  - Hobby vs. payed
  - which companies are good citicens
- BFS-Scheduler/CK-Serie
- proprietary drivers
- distributors, please ship updated kernels to get new drivers to the users
- kernel series:
  - linux-next, mm-Kernel, RT-Tree, distribution kernels, devel trees
- how the Kernel-Log is written
- How to handle LKML and commit traffic
- how to become a kernel hacker
  - http://ldn.linuxfoundation.org/book/how-participate-linux-community

Copyright

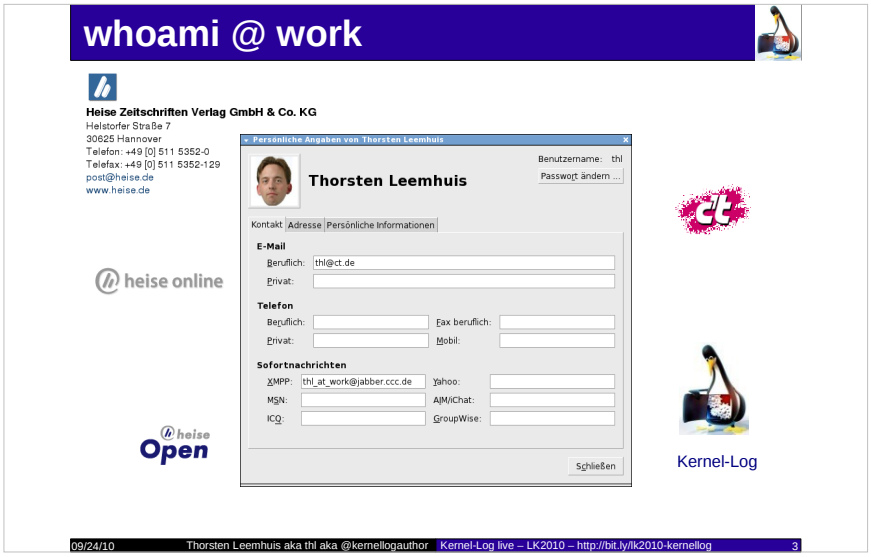
- download
  - ODP - http://bit.ly/lk2010-kernellog
  - Hint: read notes ;-)
- copyright stuff:
  - the wordclouds created with the applet on http://www.wordle.net and licensed under Creative Commons Attribution 3.0 United States License



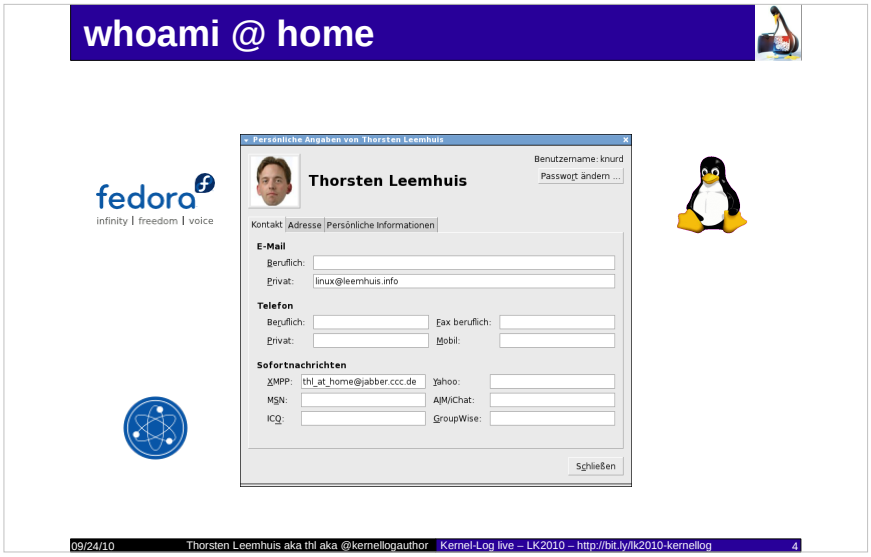
- Words for the graphics created with the applet from www.wordle.net
  - Linux-Kongress 2010:15
    - Nurnberg:5
    - Thursday:5
    - 2010/09/23:5
    - 10:45:5
  - Thorsten Leemhuis:15
    - Heise Zeitschriften Verlag GmbH&Co. KG:5
    - thl@ct.de:5
    - thorsten@leemhuis.info:5
  - Linux-Kernel:15
    - 2.6.34 :12
      - Radeon 5xxx :6
    - 2.6.35 :12
      - RPS, RFS:4
      - memory compaction:4
      - direct I/O for Btrfs:4
      - Kdb:4
      - perf:4
    - 2.6.36 :12
      - AppArmor:4
      - fanotify:4
      - Concurrency-managed workqueues:4
      - new OOM:4
      - latency reduction:4
      - CIFS FS-Cache:4
    - status:12
    - outlook:12
    - Development:10
      - stable-series:5



* everyone that uses Linux on a laptop, desktop or server
* even if most of us are not running a mainstream kernel, it still is important for us
* the kernels of distributions like these are based on the kernel from kernel.org/ the kernel developed by Linus and his fellows
  * most drivers are part of the kernel
  * these days that even includes core parts of the graphics drivers
 * even changes under the hood/at the core sometimes have an impact on ordinary users
 * decisions by linus and his fellows have impact
  * world might look different today if reiser4 or xen would have been merged
  * better or not? no idea ;-)



* Thorsten Leemhuis @ work
* nickname: thl
* thl@ct.de
* XMMP: thl_at_home@jabber.ccc.de
* editor for Heise Zeitschriften Verlag GmbH&Co. KG (Hannover, Germany)
* writing the "Kernel-Log" for heise.de and c't
  * english translations are published with a lag of about 24 to 72 hours on "The H" (h-online.com)
* my work at heise
  * write for c't and heise online about
    * mobile stuff (smartphones, Laptops); don't find much time for it
    * Linux stuff: takes nearly all of my time



- Thorsten Leemhuis @ home
  - nick: knurd
  - linux@leemhuis.info
  - 33 years old
  - raised in northern Germany (east frisia, to be precise)
  - uses distributions kernels
  - not a kernel developer!
  - „Things should just work“!
  - interested in PC hardware, Linux Kernel, Gnome, X, Fedora
  - sports: badminton, biking, jogging
  - "owns" three cats: Linus, Lucy and Ginger (pictured)
  - IRC: knurd on freenode.net and oftc.net
  - XMMP: thl_at_home@jabber.ccc.de
  - Fedora
  - RPM Fusion
  - never been to the US or any other English speaking countries for longer than a few days and hence my spoken English might not the best

Micro-Blogging

• @thleemhuis	private/personal stuff	German
• @knurd666	Fedora related things	English
• @kernellogauthor	Kernel-Log topics	English
• @kernellog	announces new Kernel Logs on heise.de	German
• @kernellog2	announces new Kernel Logs on h-online.com	English

- mad people have two or three microblog accounts
- I manage 2 x 5 :-/
- I don't use facebook

The next 35 minutes

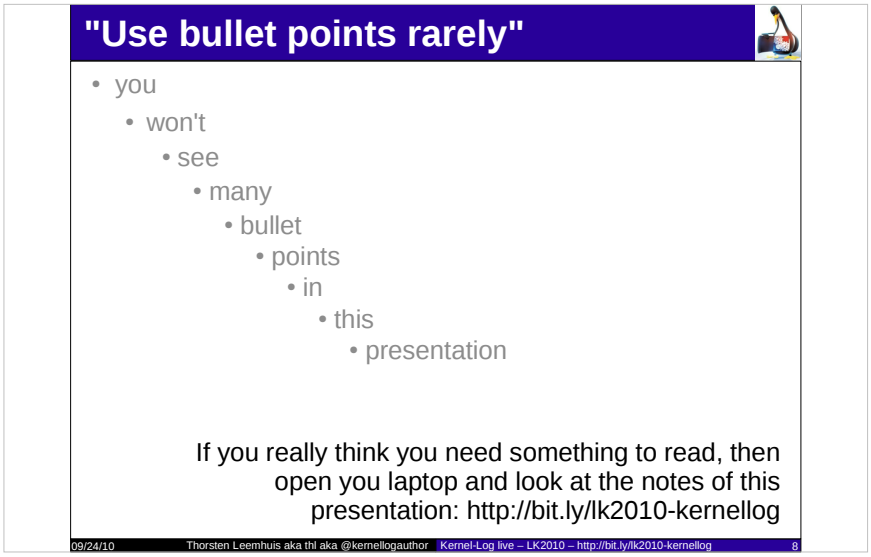
- quick overview: Linux development model, stable series
- main part: the different areas of the kernel
  - what got improved recently
  - what people are working on
- how to help
- summing up + questions
- there are a lot of more topics I can talk about if you want
  - but I doubt there will be much free time remaining, as the main part is packed with details already

* I likely know enough about the topics converred to fill 2 or three hours
* lot of details following, but
 * a lot more details to the topics mentioned are available on the net
* problem: there are likely experts of some areas in the audience
 * if I tell something stupid yell at me
* my view in some areas is a bit different to the one from Corbet
 * I'm for example focusing a bit more on the usual c't / heise online reader

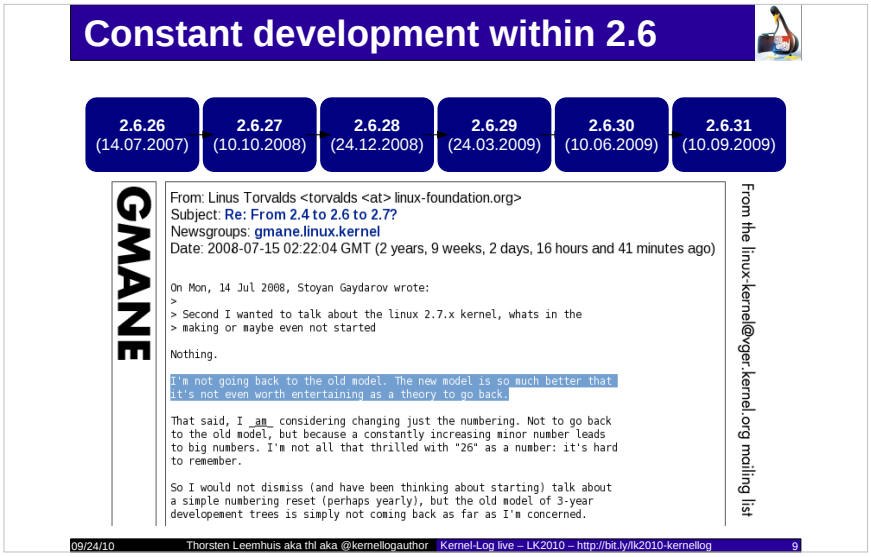
"Use bullet points rarely"

- you
  - won't
    - see
      - many
        - bullet
          - points
            - in
              - this
                - presentation

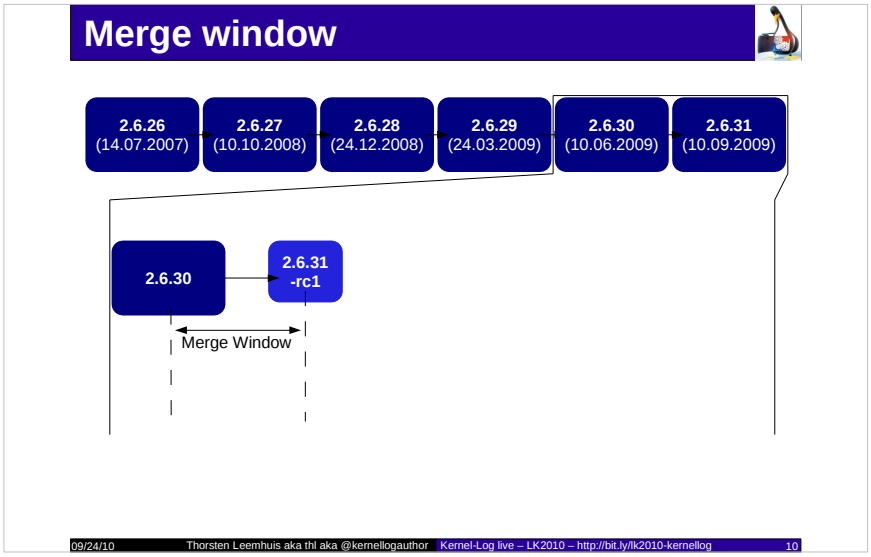
- nothing to see here, move along



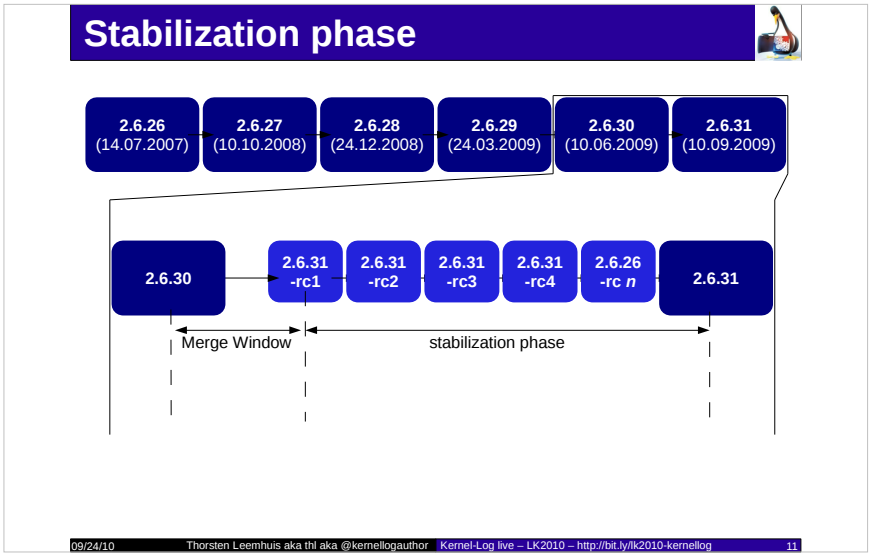
- URL in the lower right all the time



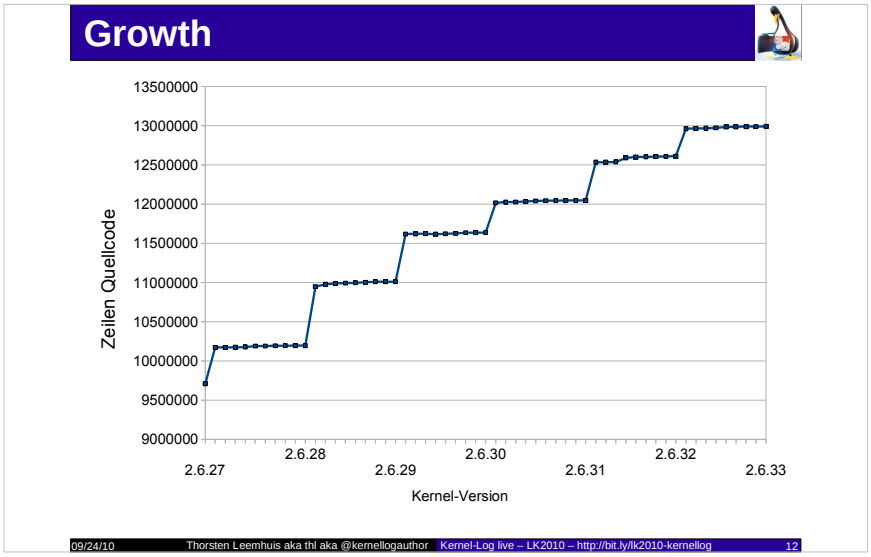
* since more than 6 years now
  * round about 4 to 5 (closer to 4) new kernels a year
* the old model with a unstable series (2.3 preparing 2.4, 2.5 preparing 2.6) is gone
* the current model really works well
* new version numbering scheme discussed more than two years ago
  * no outcome (yet)



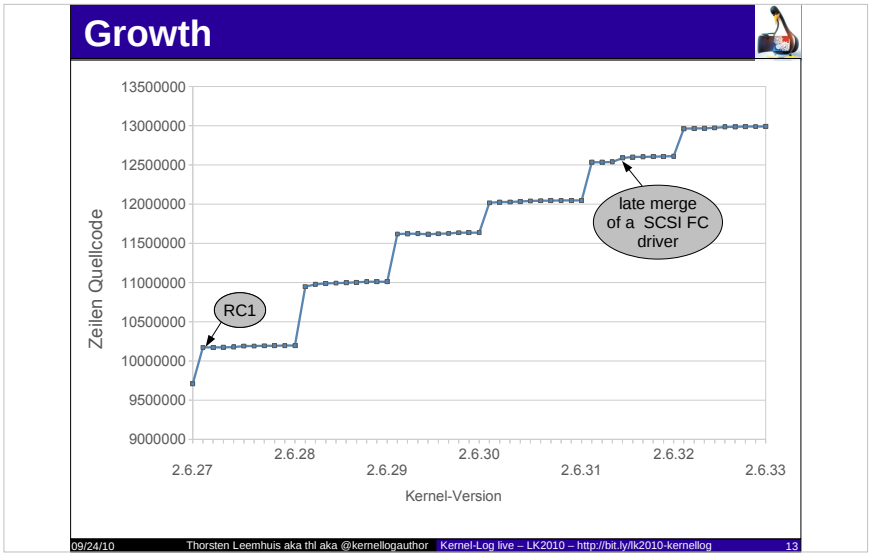
* all the big changes get integrated in this phase
 * round about 4/5 to 9/10 commits in this part
 * all the big changes
* begins directly after a new version got released
 * IOW: 2.6.(n+1) development begins right after 2.6.n got released
* ends with rc1
  * round about two weeks long
* details: Documentation/development-process



* normally lasts eight to eleven weeks
 * getting a bit shorter
* only patches that fix things
 * in some aspects maybe similar to the stable rules (later)
 * since 2.6.35 Linus enforces this more strictly
  * makes this period a bit shorter
* there are exceptions, especially between rc1 and rc2
* new rc's weekly
 * often in the night from Sunday to Monday
* Details: Documentation/development-process



* every version get round about 500.000 lines bigger
* looks like this growth is not a big problem for embedded



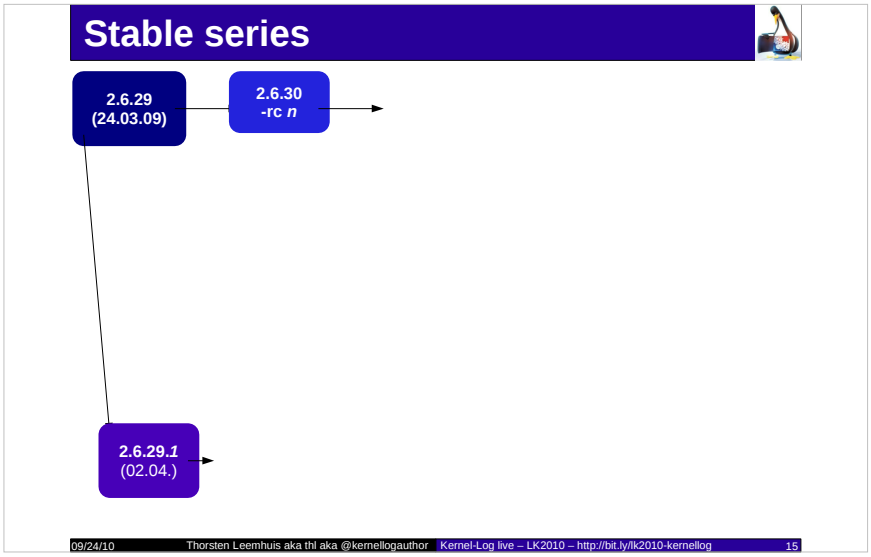
* merge window can be seen easily

Some stats

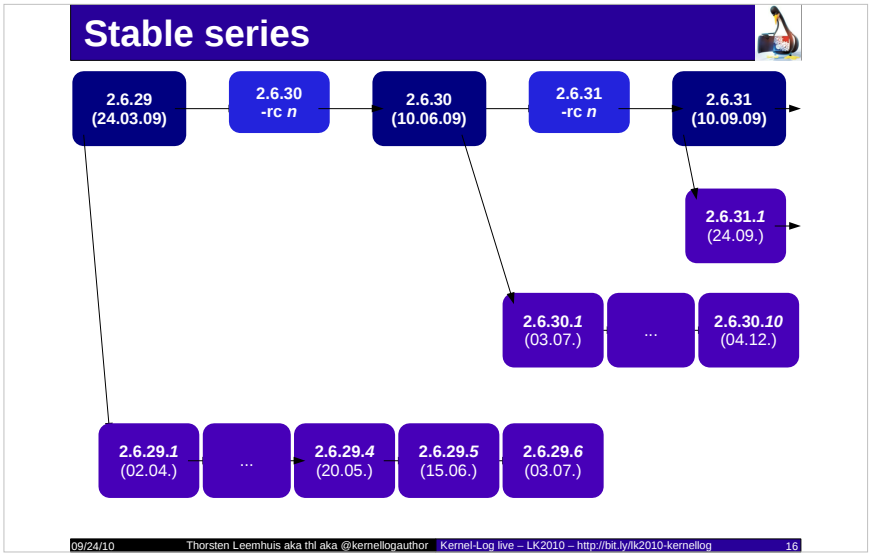
Linux-Version	Anzahl Dateien[1]	Zeilen Quelltext[2] (Ohne Dokum.)	Entwick-lungs-zeitraum	Anzahl Commits[3]	Diffstat[4]
2.6.31	29111	12046317 (10778469)	92 Tage	10883	8938 files changed, 914135 insertions(+), 504980 deletions(-)
2.6.32	30485	12610030 (11242136)	84 Tage	10998	10315 files changed, 1092987 insertions(+), 530428 deletions(-)
2.6.33	31565	12990041 (11564768)	83 Tage	10871	9673 files changed, 859458 insertions(+), 479452 deletions(-)
2.6.34	32297	13320934 (11861616)	82 Tage	9443	11154 files changed, 609854 insertions(+), 278958 deletions(-)
2.6.35	33316	13545604 (12250679)	77 Tage	9801	8889 files changed, 691927 insertions(+), 467252 deletions(-)

[1] find . -type f -not -regex '\/\.git/.*' | wc -l
[2] find . -type f -not -regex '\/\.git.*' | xargs cat | wc -l (find . -name *.[hcS] -not -regex '\/\.git.*' | xargs cat | wc -l)
[3] git-log --no-merges --pretty=oneline v2.6.(x-1)..v2.6.(x) | wc -l
[4] git diff --shortstat v2.6.(x-1)..v2.6.(x)

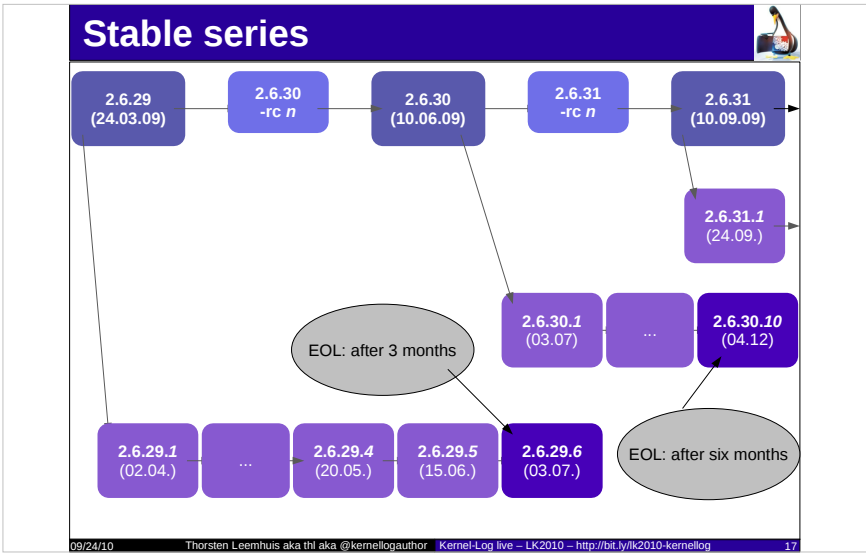
* devel cycle is getting a bit quicker
* Corbet: "last year: consolidation and completion" but also "[...] there is still a lot in the works



- older example, but you'll get the idea



- older example, but you'll get the idea



- some kernels only get bugfixes for 3 months, other six or more
- now and then a version is deemed "long term stable release"
  - currently those are 2.6.27 and 2.6.32

Stable series

[linux/kernel/git/torvalds/linux-2.6.git] / Documentation / stable_kernel_rules.txt

```
Everything you ever wanted to know about Linux 2.6 -stable releases.

Rules on what kind of patches are accepted, and which ones are not, into the
"-stable" tree:

 - It must be obviously correct and tested.
 - It cannot be bigger than 100 lines, with context.
 - It must fix only one thing.
 - It must fix a real bug that bothers people (not a, "This could be a
   problem..." type thing).
 - It must fix a problem that causes a build error (but not for things
   marked CONFIG_BROKEN), an oops, a hang, data corruption, a real
   security issue, or some "oh, that's not good" issue.  In short, something
   critical.
 - New device IDs and quirks are also accepted.
 - No "theoretical race condition" issues, unless an explanation of how the
   race can be exploited is also provided.
 - It cannot contain any "trivial" fixes in it (spelling changes,
   whitespace cleanups, etc).
 - It must follow the Documentation/SubmittingPatches rules.
 - It or an equivalent fix must already exist in Linus' tree (upstream).

```


- fixes for released version, with an additional number in the version field
  - 2.6.32.6 = the sixth bug fix version based on 2.6.32
- (similar) change hat to be in Linus tree first
- full text: Documentation/stable_kernel_rules.txt

Stable series: status

- 2.4.xx: not yet dead, but dying
- 2.6.27: growing old: will soon be dropped or frozen deeper
- 2.6.32: current "long term stable release"
- 2.6.34: support stopped recently
- 2.6.35: current

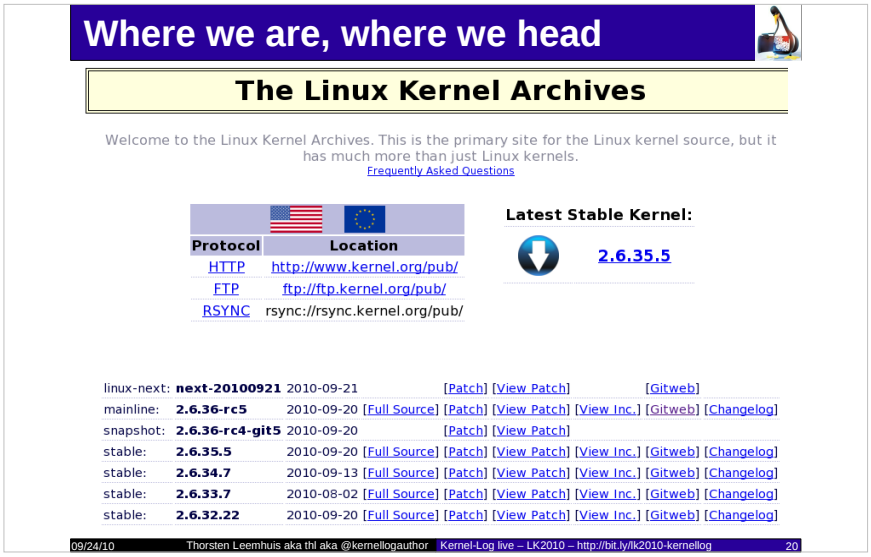
From: Greg KH <gregkh <at> suse.de>
Subject: **Linux 2.6.35.2**
Newsgroups: **gmane.linux.kernel**
Date: 2010-08-13 21:23:13 GMT

I'm announcing the release of the 2.6.35.2 kernel.

All users of the 2.6.35 kernel series must upgrade.

I'm tired of people trying to parse my words like I'm the Federal Reserve Chairman, just go update already. If you use a kernel.org-based kernel, and you aren't updating to the latest -stable updates, well, why are you using a kernel.org kernel in the first place?

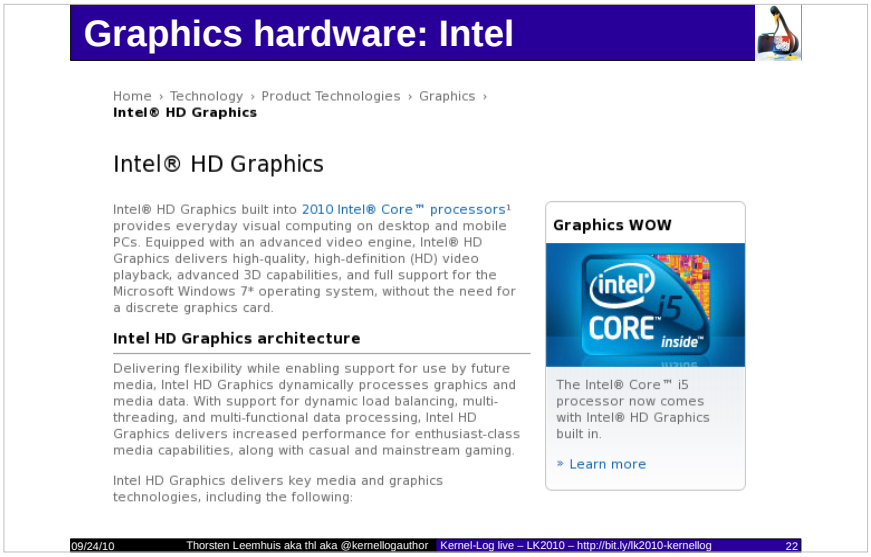
- security fixes are not made obvious
- so either update to latest or use a distribution kernel!
- Questions so far?



- Questions so far?
- screenshot from last Tuesday evening CEST
  - with a bit of luck it's not yet outdated to much ;-)
  - mention linux-next quickly

Graphics hardware: AMD/ATI

* 2.6.33 Radeon KMS left staging
* 2.6.34 KMS for evergreen/the Radeon 5000 series
* 2.6.35 power management for Radeon
* 2.6.35 basic DRM support for Evergreen
 * experimental 3D code in Mesa 7.9
 * experimental 3D code in the works for xf86-video-ati
* 2.6.36: Underscan, Tiling, Hyper-Z, Hwmon
* MISC
 * Gallium3D driver for r600 and later in development
  * this doesn't matter to much for users, even if it sometimes looks different from the articles on a particular website that has focuses around Linux and PC hardware
 * support for HD 6000 series might come quicker
  * rumors: chips might be not that different from HD 5000 series
 * KMS not (yet) mandatory
 * (userspace) radeonhd is dead

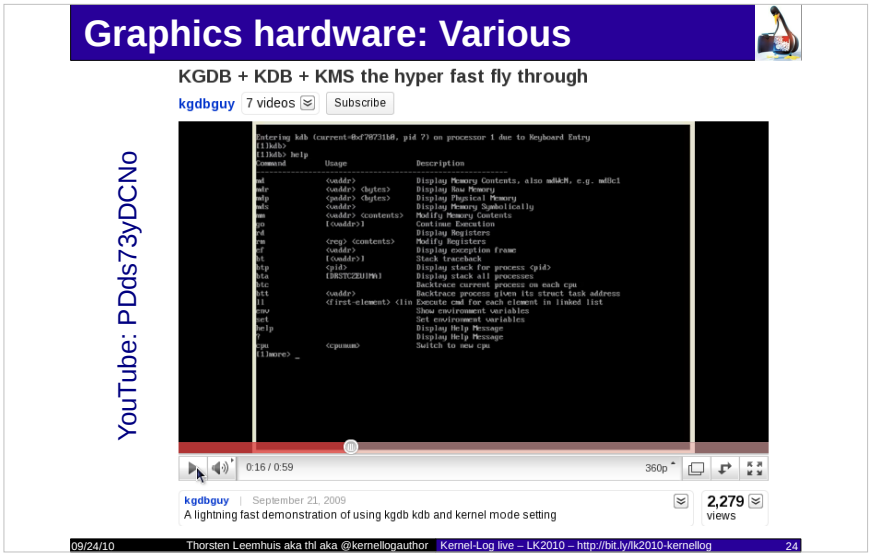


* 2.6.34 / 2.6.35 / 2.6.36 Sandy-Bridge
 * yes, support for boring integrated graphics is important ;-)
* 2.6.34 Memory Self-Refresh for 9xx (saved 0,8 Watts for the developer)
* 2.6.35 H264 decoding for G45 and Ironlake (Core i3/i5)
* 2.6.35 Memory Self-Refresh for Ironlake (saved 1 Watt)
* 2.6.35 Frame Buffer Compression (saved 0,2 watts)
* 2.6.36 Intelligent Power Sharing (IPS) for Ironlake
 * called "HD Graphics Dynamic Frequency Technology"
  * sort of "Turbo Boost now including GPU"
  * Notebooks only for now
* MISC
 * In case you missed it:The GPU becomes a part of the processor
 * KMS mandatory
 * support for GMA500/GMA600 aka poulsbo still sucks
  * seems that even makes a lot of Intel developer unhappy
  * avoid it (hard to find in Netbooks these days anyway)

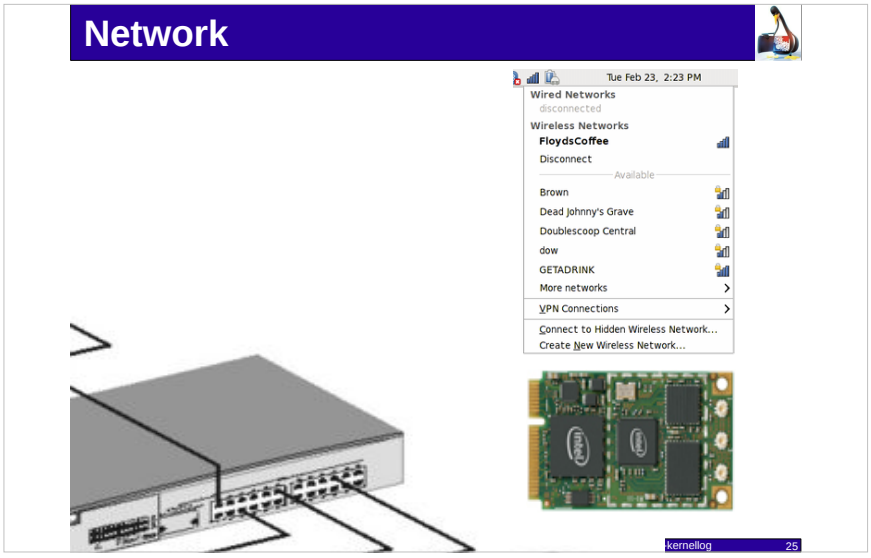
Graphics hardware: Nvidia

* 2.6.33 Nouveau merged
* 2.6.34 big rework, broke userspace interface
 * UMS support removed/KMS only now
 * allowed because it's (a special kind of) staging driver
* 2.6.36: basic, still quite limited support for Fermi (GeForce 4xx series)
* 2.6.36 improved Suspend and Resume
* MISC
 * still changing fast
  * still a lot to do
 * experimental 3D in Fedora 13
 * PM Support in the works
  * still no FAN control :-/

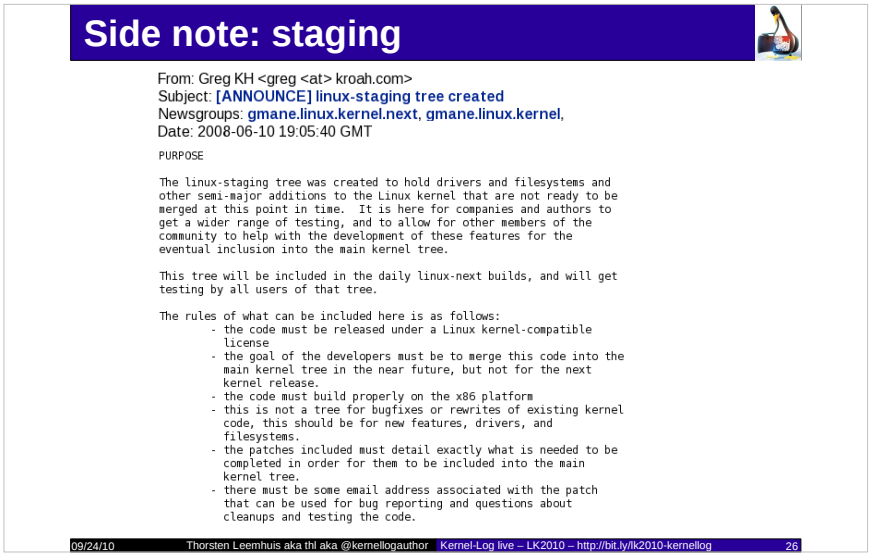
Graphics hardware: Various



* 2.6.34 VGA-Switcheroo
 * switch between integrated and discrete graphics chip
 * 3D or maximum battery depending on what you want/need/do
 * Optimus support not in sight
  * Notebook buyers beware
* 2.6.33 vmwgfx
 * (kind of) staging (just like nouveau, but not that much changing)
 * 2.6.36 KGDB + KDB & KMS
  * Intel only
  * Radeon und Nouveau willl likely follow in the not to distant future
* 3d driver support for embedded chips still problematic
 * vendors still need to learn understanding the benefits of open drivers

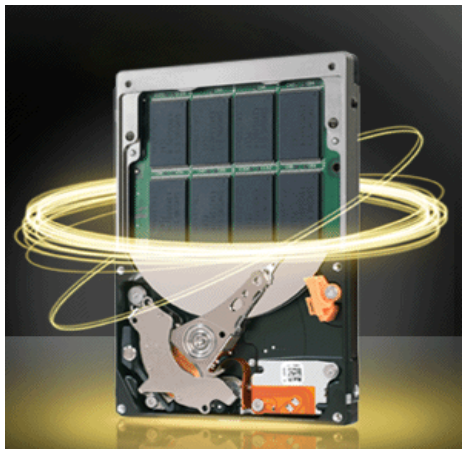


* 2.6.36 Receive Packet Steering (RPS) and Receive Flow Steering (RFS)
 * uses multicore systems more efficient
 * both might need individual tuning; see the docs and the commit message for details
  * that's why reading websites with sum up the most important changes is important
* new and improved drivers all the time
 * SR-IOV support for Enterprise network adapters in 2.6.34, .35 and .36
 * 2.6.35 automatically load PHY drivers
* wlan drivers: getting better
 * still a lot to do
 * otus (Atheros USB) replacement carl9170 will likely be in 2.6.27
 * ralink support improving
 * same with realtek
  * pm support for example could get improved
  * some verndors (inlcuding intel) no docs, only drivers
  * intel recently stopped maintaining the ipw2?00 drivers
 * fresh addition: brcm80211
  * supports three recent 802.11n chips
  * mcgrof in http://identi.ca/notice/49652702: I think we're done with the mission of opening up all #802.11 #Linux wireless drivers... Took more than 5 years, but we're there!
  * firmware for old devices stays problematic
 * lot's of important WLAN drivers are in the staging tree



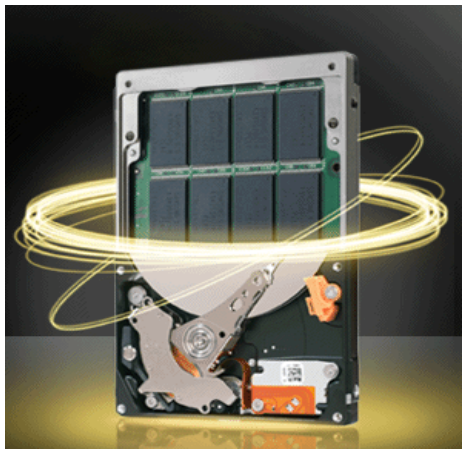
* contains Hyper-V-Drivers from MS as well as udlfb, crystalhd and several of WLAN drivers from Ralink, Realtek and Via
* Kernel hackers often referred to staging (or the code in it) as "crap"
  * Hyper-V long lacked SMP support
  * the new Broadcom driver misses certain features like 40 MHz support, PM and Hardware encryption
  * drivers use old stack (and diffrent ones even, each with its own copy)
  * that's one of the reasons why the NM developer doesn't like staging drivers much
  * a lot of NM problems in fact are driver failures
* in the past two years (since staging got merged into 2.6.28) only *one* driver matured so much that it could be moved out of staging
  * some more to come with 2.6.37
* lot's of drivers got dropped again because nobody took care of them
* new: staging as a way to kick out drivers
  * happened to a few old and likely obsolete wifi drivers
  * might happen soon again in the BKL removal
* some distributions don't even ship the most well known staging drivers (like the ones for Ralink, Realtek and VIA Wifi chips)
* better avoid hardware that needs staging drivers!
  * only partly holds true for nouveau (and maybe) vmwgfx
  * marked as staging
  * but not located in drivers/staging/
  * nouveau has developers that certainly will take care of the drivers in the future

Storage

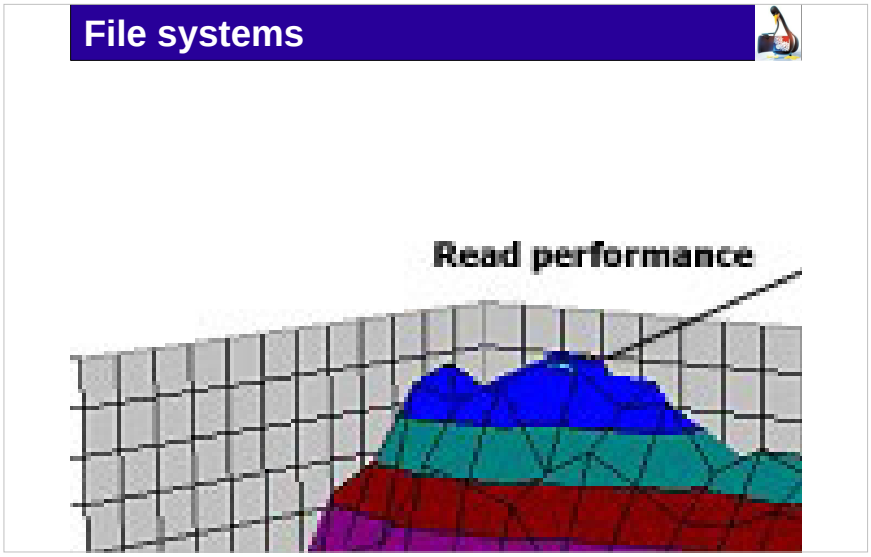


* 2.6.31 topology
 * important for drives with 4k-sektors (and other things)
 * use a fresh fdisk to align partitions properly!
* 2.6.32 and ongoing: discard support in various subsystems
* 2.6.33 drbd
* 2.6.33 I/O bandwidth controller, dm snapshots merge
 * Fri, 9.30: Shared snapshots by Mikulas Patocka
* 2.6.3x various RAID migration paths were made possible
* raid unification
 * 2.6.36 btrfs will use raid6 core formally based in md layer
* dmraid might soon be able to use raid5 code from md layer
  * maybe HostRAID support then will finally work better...
* CFQ
 * obsoleted AS in 2.6.33
 * lot's of optimizations recently and a lot more in the works
  * among those that are in already: interactivity optimizations
  * makes you think your system got faster

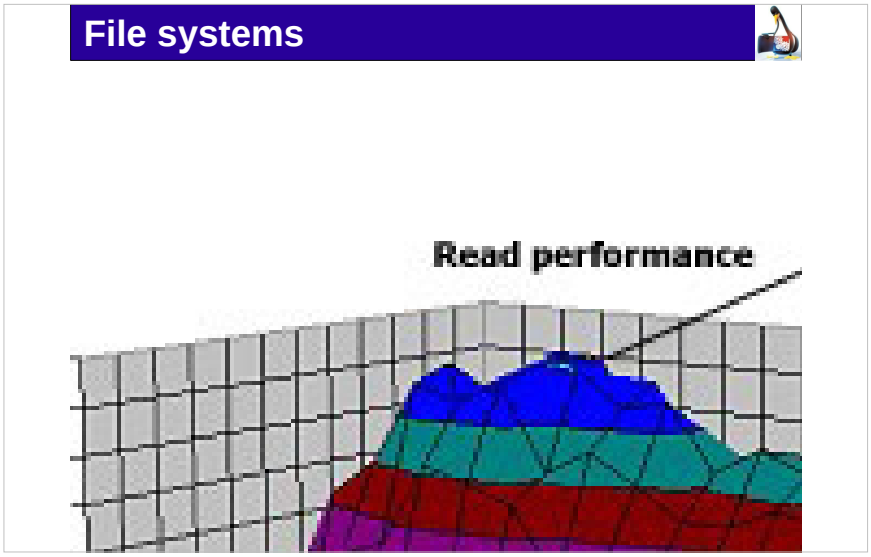
Storage



* Barriers
 * will be realized differently soon, should improve performance
* 2.6.33 I/O controller stuff
 * still a lot changing
* challenges
 * SSDs
  * many IOPs and thuns a bit like 10G network
 * hierarchical storage (bcache, btrfs, ...)
  * fast data on fast storage devices
 * thin provisioning
* MISC
 * EFI / GPT: kernel should work, but seems distributions suck
 * new drivers still important, but not that important anymore thanks to ahci :-)
* Talks on KVM at LK2010

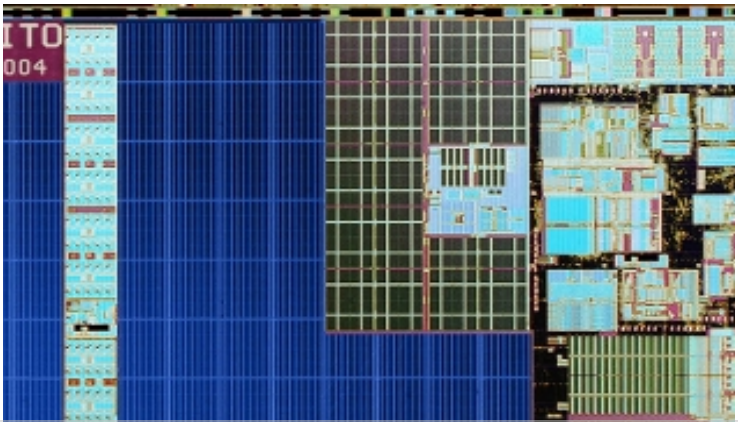


- Ext[234]
  - ext4 is getting production ready; default in RHEL6
  - interim solution on the way to btrfs?
- Btrfs
  - 2.6.35 Direct I/O, better out of space handling
  - still experimental, default in Meego
  - last Ondisk format change 2.6.31
  - RAID 5 and 6 in the works
  - likely needs 6 to 12 months to mature, but getting closer
  - fsck tool in heavy development
  - COW downsides being worked on
  - Video from Linuxcon
  - Features: COW, Performance, check summing, snapshots, internal RAID, snapshot for system updates



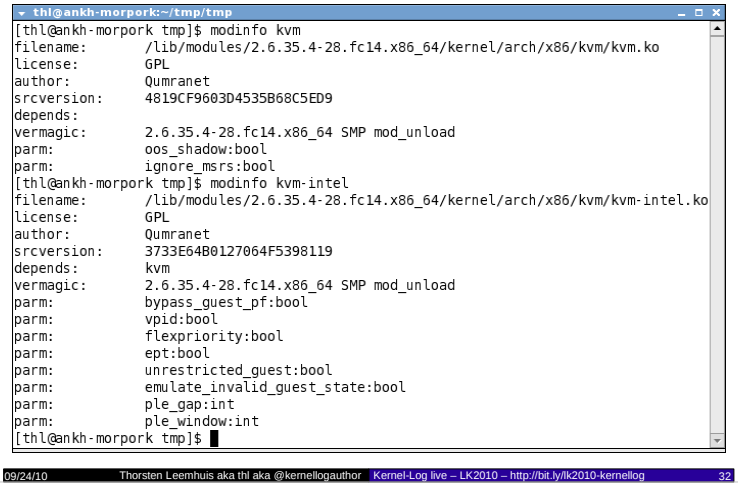
- 2.6.35 Splice for Fuse
- XFS: lots of optimizations happening, great monthly reports!
- 2.6.34 Logfs
- 2.6.34 Ceph
  - based on Btrfs, targeting clusters
  - still chaging a lot, big re-work missed 2.6.36 and now is in linux next
- 2.6.36 NFS 4.1 server and client support matures
- 2.6.36 CIFS FSCache
- 2.6.36 / 2.6.37 VFS Scalibility
- 2.6.36 LZO support for Squashfs
  * LZMA in 2.6.37?
- MISC
  - Reiserfs: BKL removal, otherwise dead
  - Union Mounts: maybe getting closer (maybe not: new approach)
  - Challanges: "One billion Files on Linux" (LWN.net)
- Fri, 10:45 Tracking filesystem modifications by Jan Kára
- Fri, 11:30, Log2fs or how to achieve 150.000 IO/s by Jörn Engel

Architecture

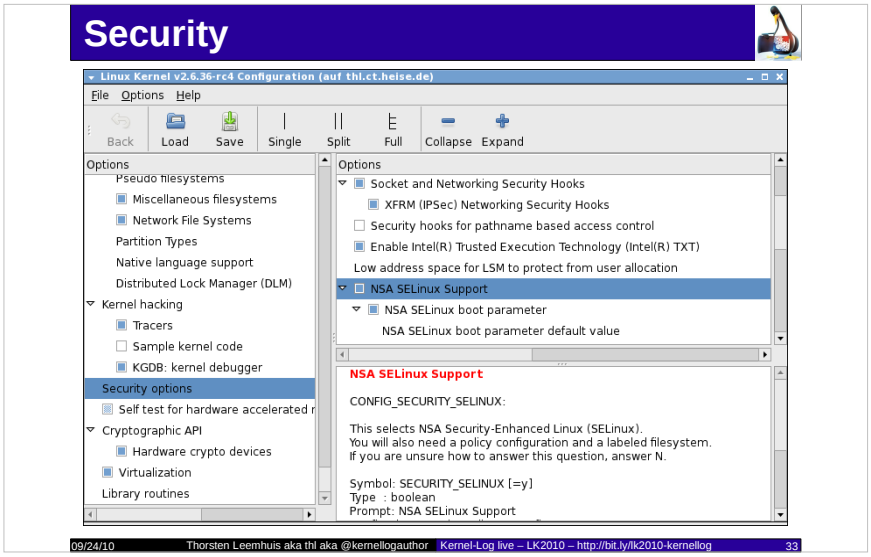


- 2.6.35 properTurbo Core support
  - fixes for a bug that reduced performance had earlier been added to stable kernels
- 2.6.36 tegra
- 2.6.36 Tile

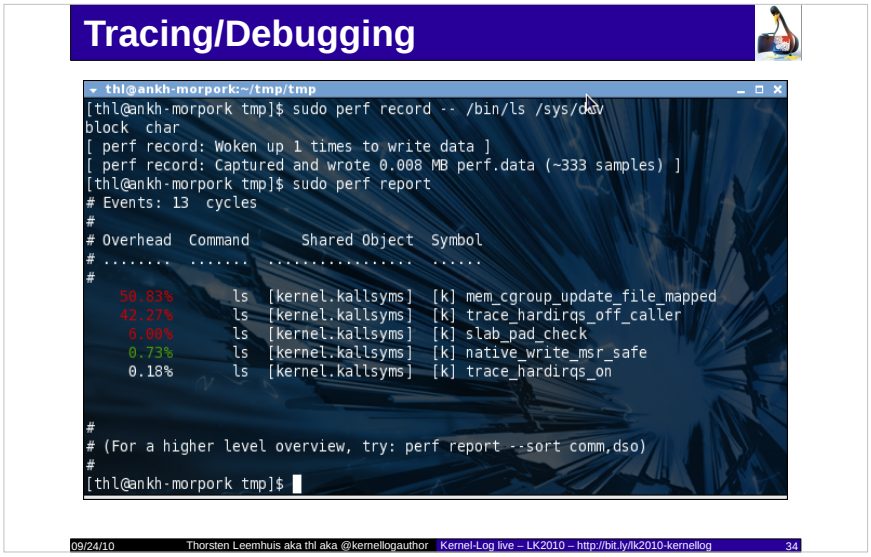
Virtualization



* 2.6.32 KSM
* 2.6.34 macvtap
 * reduces load when VM on one host communicate with each other
* 2.6.34 vhost-net
 * reduces load when communicating with other machines
 * zero-copy support in the works
* 2.6.34 vmware-ballon
* 2.6.35 perf kvm
* 2.6.35 ppc64 port
* in the works: Nested Paging Virtualization for KVM
* still a lot changes in and around KVM
 * but not that earth shaking anymore
* looks like Xen Dom0 support is getting closer to a merge again
 * some parts for it already in 2.6.36
* Lightweight Virtualization/Containers
 * not that much in the focus, but getting better
* Talks on KVM at LK2010
 * Thu, 13:45 Desktop virtualization with spice by Gerd Hoffmann
 * Thu, 14:30 Architecture of the Kernel-based Virtual Machine (KVM)
 Jan Kiszka
 * Thu, 15:45 Virtual Machine timekeeping by Glauber Costa
 * Thu, 16:30 KVM on Server Class PowerPC by Alexander Graf

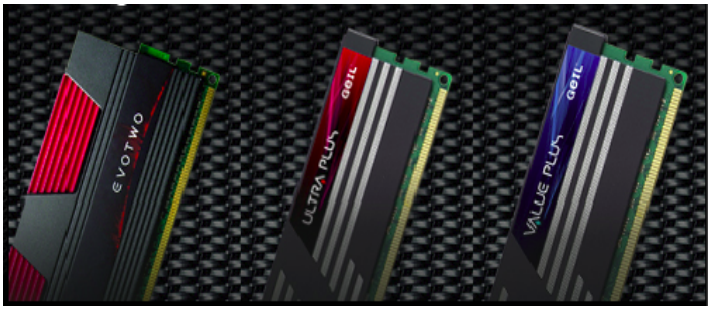


- 2.6.36 AppArmor
- 2.6.36 Fanotify
- 2.6.36 Tomoyo: "intreactive enforcing mode"



* changing rapidly
* 2.6.31 perf events
* 2.6.33 dynamic ftrace
* 2.6.35 perf kvm
* 2.6.35 APEI (ACPI Platform Error Interface)
* 2.6.35 Kdb
* 2.6.36 Kdb + Kgdb & KMS integration (intel)
* latency, power
* expect more
* userspace side?
* perf and ftrace coming closer together
* becomes a dtrace-like solution: more tracepoints, interrupts, ...
* might systemtab in the long run be based on top of perf and ftrace?
* Talks on KVM at LK2010
  * Fri, 9:30: The New Linux 'perf' Tools by Arnaldo Melo

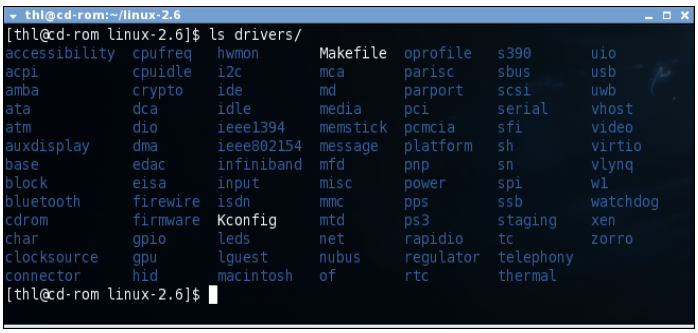
Memory management (MM)



* 2.6.32: hwpoison (still improving)
* 2.6.32: KSM
 * not only of interest for virtualization
* 2.6.35: memory compaction
 * defrag your RAM
 * make room to use RAM with big pages
* 2.6.36 fix PAGEOUT_IO_SYNC stalls
* 2.6.36: new OOM
* 2.6.36 compcache now called zram
* coming
 * SLAB imporvements/"kind of" merge of SLAB and SLUB
 * Transparent hugepages
 * hugepage migration
 * zcache, cleancache
 * writeback is being optimized

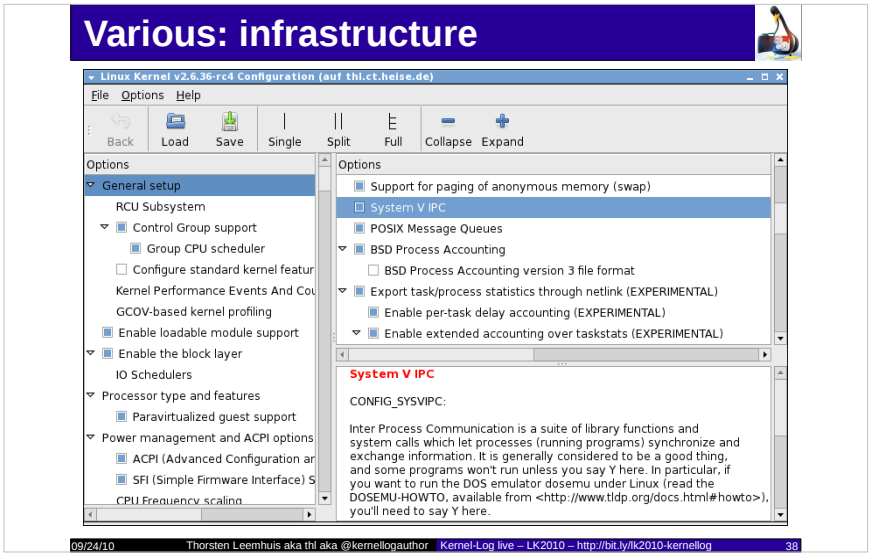
- 2.6.34/35 quicker suspend and resume
  - I noticed it
- 2.6.34 and ongoing: runtime PM for I/O devices
- 2.6.35 CPUidle optimizations
  - might speed things up, as CPU sometimes earlier slept to often
- 2.6.35 timer slack
- 2.6.35 acpi_idle
- 2.6.36 race free suspend (one of the problems Android solved differently earlier)
- idle cycle injection under discussion
- tuxonice: unlikely, but (once again) attempts to merge parts or ideas of it

Various: drivers

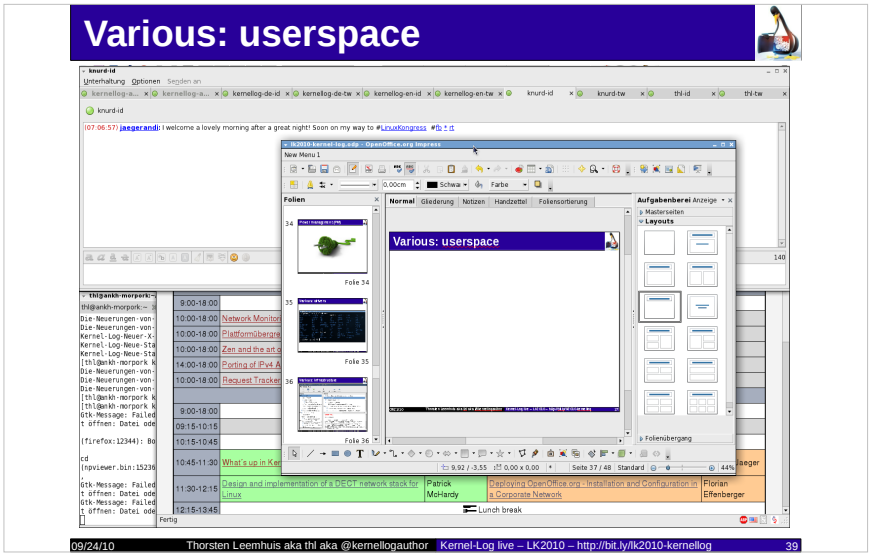


* 2.6.35 New IR-Subsystem
* 2.6.36 a LIRC interface, lot of new IR-drivers (most LIRC ports) and LIRC drivers in staging
* audio drivers close to alsa upstream
  * USB audio support got better in 2.6.34 and 2.6.35
  * a lot of quirks needed for todays hardware
  * report your problems!
* USB 3.0 still improving
* IR/Infrared hardware
* Old Firewire-Stack soon gone
* magic trackpad support will like be part of 2.6.37

Various: infrastructure



- ongoing, but soon kind of finished: BKL removal
- 2.6.35 make nconfig
- 2.6.36 saveconfig and alldefconfig(+more) new mechanisms to generate default config files
  - saves a lot of space
- 2.6.36 Concurrency-managed workqueues
- 2.6.36 kfifo rewrite
- unlikely to come: BFS-Scheduler/CK-Serie,
- realtime
  - coming: deadline scheduler
  - not fast, predictable
  - sleeping spinlocks, prepared with 2.6.33
- desktop responsiveness
- mm preemtibility
- scalability fixes
- mobile/embedded developers and the kernel
  - Android
- general effort: scalability
  - more cores
  - SSDs
  - quick random access = lots of IOPS



- systemd
  - Fri, 13:30: systemd by Lennart Poettering
- Xorg might merge some drivers back into the server
  - input drivers first
  - not yet sure if video driver will follow

Staying up2date: Kernel-Log (de)

http://www.heise.de/open/

Staying up2date: Kernel-Log (en)

http://www.h-online.com/open/

Staying up2date: Linux Weekly News

http://lwn.net/

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Printable page

LWN featured content

[$] What ever happened to chunkfs?
[Kernel] Posted Jun 17, 2009 12:23 UTC (Wed) by jake

Guest author Valerie Aurora is frequently asked about chunkfs, which is a prototype file system implementing "repair-driven" file system features. Her answer: "Chunkfs works, the overhead is reasonable, and it is only practical if it is part of the file system design from the beginning, not tacked on after the fact. I just need to write up the paper summarizing all the data." That paper is now available, subscribers only, from this week's Kernel page.

Full Story (comments: 25)

[$] FreedomHEC Taipei 2009
[Front] Posted Jun 15, 2009 15:31 UTC (Mon) by corbet

FreedomHEC (Freedom Hardware Engineer's Conference) Taipei was held June 10 and 11 in, unsurprisingly, Taipei, Taiwan. The event, sponsored by the governmental Institute for Information Industry, followed the huge Computex conference in the hope of attracting hardware developers who are interested in supporting Linux. LWN Executive Editor Jonathan Corbet spoke at FreedomHEC; the following report (subscribers only) gives a look at the conference and what it accomplished.

What is LWN.net?
LWN.net is a reader-supported news site dedicated to producing the best coverage from within the Linux and free software development communities. See the LWN FAQ for more information, and please consider subscribing to gain full access and support our activities.

Current news

OpenSource World Unlocks the Word on Keynote Speakers (Linux Journal)
[Press] Posted Jun 19, 2009 23:05 UTC (Fri) by ris

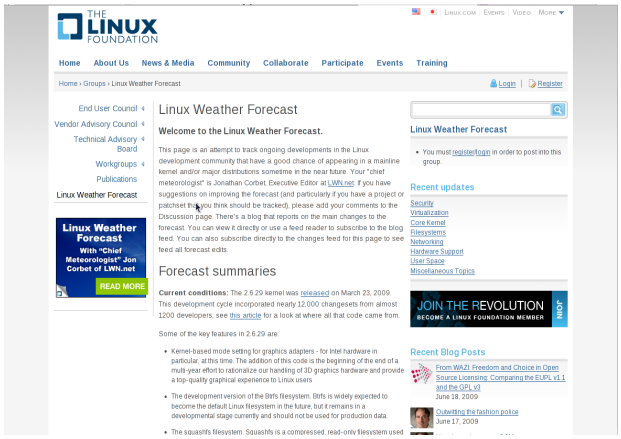
Linux Journal looks forward to the OpenSource World conference, previously known as LinuxWorld. "Keynote speakers are always a highlight of any conference, and OpenSource World is no exception. The expo's main speaker will be California Secretary of State Debra Bowen, who is known to the Open Source community for understanding and advocating Open Source software. Additionally, there will be a keynote panel, "Assessing the Real Market Opportunities and Obstacles for Making Cloud Computing Mainstream," lead by CloudWorld conference chairman Jeffrey Kaplan and including discussion and debate by panelists Joe Weinman of AT&T Business Solutions, Sam Charrington of Appistry, and James Urquhart of Cisco."

Comments (none posted)

openSUSE Factory is Now Open

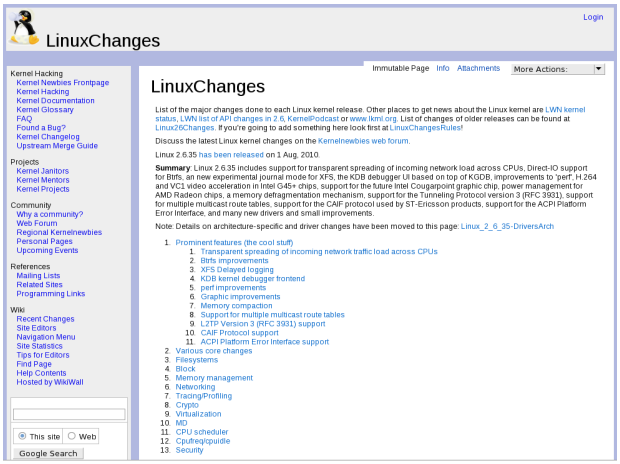
Staying up2date: Weather Forecast

http://www.linuxfoundation.org/collaborate/lwf



Staying up2date: Kernelnewbies

http://kernelnewbies.org/LinuxChanges



Test and Report bugs!

http://bugzilla.kernel.org/

Test -rc Kernels!

http://bit.ly/tytso-help-testing

From: Ted Ts'o <tytso <at> mit.edu>
Subject: **Re: stable? quality assurance?**
Newsgroups: **gmane.linux.kernel**
Date: 2010-07-11 13:16:40 GMT (9 weeks, 4 days, 5 hours and 26 minutes ago)

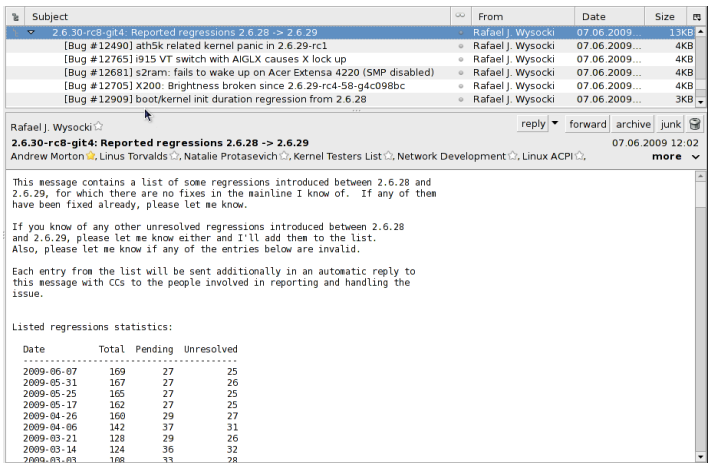
On Sun, Jul 11, 2010 at 09:18:41AM +0200, Martin Steigerwald wrote:
>
> I still actually ***use*** my machines for something else than hunting patches
> for kernel bugs and on kernel.org it is written "Latest ***Stable*** Kernel"
> (accentuation from me). I know of the argument that one should use a
> distro kernel for machines that are for production use. But frankly, does
> that justify to deliver in advance known crap to the distributors? What
> impact do partly grave bugs reported on bugzilla have on the release
> decision?

So I tend to use -rc3, -rc4, and -rc5 kernels on my laptops, and when I find bugs, I report them and I help fix them. If more people did that, then the 2.6.X.0 releases would be more stable. But kernel development is a volunteer effort, so it's up to the volunteers to test and fix bugs during the rc4, -rc5 and -rc6 time frame. But if the work tails off, because the developers are busily working on new features for the new release, then past a certain point, delaying the release reaches a point of diminishing returns. This is why we do time-based releases.

It is possible to do other types of release strategies, but look at Debian Obsolete^H^H^H^H^H^H^H^H Stable if you want to see what happens if you insist on waiting until all release blockers are fixed (and even with Debian, past a certain point the release engineer will still just reclassify bugs as no longer being release blockers --- after the stable release has slipped for months or years past the original projected release date.)

So if you and others like you are willing to help, then the quality of the Linux kernels can continue to improve. But simply complaining about it is not likely to solve things, since threating to not be willing to upgrade kernels is generally not going to motivate many, if not most, of the volunteers who work on stablizing the kernel.

Regression Reports



Subject	From	Date	Size
2.6.30-rc8-git4: Reported regressions 2.6.28 -> 2.6.29	Rafael J. Wysocki	07.06.2009...	13KB
[Bug #12490] ath5k related kernel panic in 2.6.29-rc1	Rafael J. Wysocki	07.06.2009...	4KB
[Bug #12765] i915 VT switch with AIGLX causes X lock up	Rafael J. Wysocki	07.06.2009...	4KB
[Bug #12681] s2ram: fails to wake up on Acer Extensa 4220 (SMP disabled)	Rafael J. Wysocki	07.06.2009...	4KB
[Bug #12705] X200: Brightness broken since 2.6.29-rc4-58-g4c098bc	Rafael J. Wysocki	07.06.2009...	4KB
[Bug #12909] boot/kernel init duration regression from 2.6.28	Rafael J. Wysocki	07.06.2009...	3KB

Rafael J. Wysocki — reply | forward | archive | junk

2.6.30-rc8-git4: Reported regressions 2.6.28 -> 2.6.29 07.06.2009 12:02

Andrew Morton, Linus Torvalds, Natalie Protasevich, Kernel Testers List, Network Development, Linux ACPI, **more**

This message contains a list of some regressions introduced between 2.6.28 and
2.6.29, for which there are no fixes in the mainline I know of. If any of them
have been fixed already, please let me know.

If you know of any other unresolved regressions introduced between 2.6.28
and 2.6.29, please let me know either and I'll add them to the list.
Also, please let me know if any of the entries below are invalid.

Each entry from the list will be sent additionally in an automatic reply to
this message with CCs to the people involved in reporting and handling the
issue.

Listed regressions statistics:

Date	Total	Pending	Unresolved
2009-06-07	169	27	25
2009-05-31	167	27	26
2009-05-25	165	27	25
2009-05-17	162	27	25
2009-04-26	160	29	27
2009-04-06	142	37	31
2009-03-21	128	29	26
2009-03-14	124	36	32
2009-03-03	108	33	28

Finally ()

- 2.6.35 (released in August)
  - RPS, RFS, memory compaction, direct I/O for Btrfs, Kdb, perf
- 2.6.36 in mid October
  - AppArmor, fanotify, Concurrency-managed workqueues, new OOM, latency reduction, CIFS FS-Cache
  - improved hardware support thanks to new and improved drivers
- 2.6.37 for the start of next year
- still a lot happening, as there still is a lot to do
  - but yes, maybe things are slowing down a bit
- support for 2.6.27 might soon stop (and 2.4 as well)
- always upgrade to the latest stable releases
  - or use a kernel from a distribution to let the distributor fix all security bugs for you

- Things slowing down because most of the important things are in place?
- Maybe in some areas
- Lot's of drivers still missing or offer only basic support
- Testing and QA improvements needed?
- Unsolved: Get new drivers/new kernels to the users quickly

Wanna know more about these? Ask!

- LWN: Who writes the kernel
  - Hobby vs. payed
  - which companies are good citicens
- BFS-Scheduler/CK-Serie
- proprietary drivers
- distributors, please ship updated kernels to get new drivers to the users
- kernel series:
  - linux-next, mm-Kernel, RT-Tree, distribution kernels, devel trees
- how the Kernel-Log is written
- How to handle LKML and commit traffic
- how to become a kernel hacker
  - http://ldn.linuxfoundation.org/book/how-participate-linux-community

- More details to anything I mentioned earlier?
- How the KL is done?
- Motivation/Who writes the Kernel?
- Proprietary drivers
- linux-next, mm-Kernel, RT-Tree, subsystem trees
- Distributions and the kernel?
- How to become a kernel developer
- "Survival of the fittest"
- Linux 2.8/3.0
- external drivers are expensive
- Roadmap?
- LKML and Patch-Flow
- Regressions

Copyright

- download
  - ODP - http://bit.ly/lk2010-kernellog
  - Hint: read notes ;-)
- copyright stuff:
  - the wordclouds created with the applet on http://www.wordle.net and licensed under Creative Commons Attribution 3.0 United States License