

The Linux Kernel

Who is developing it,
how they are doing it,
and why you should care

Greg Kroah-Hartman
SuSE Labs / Novell

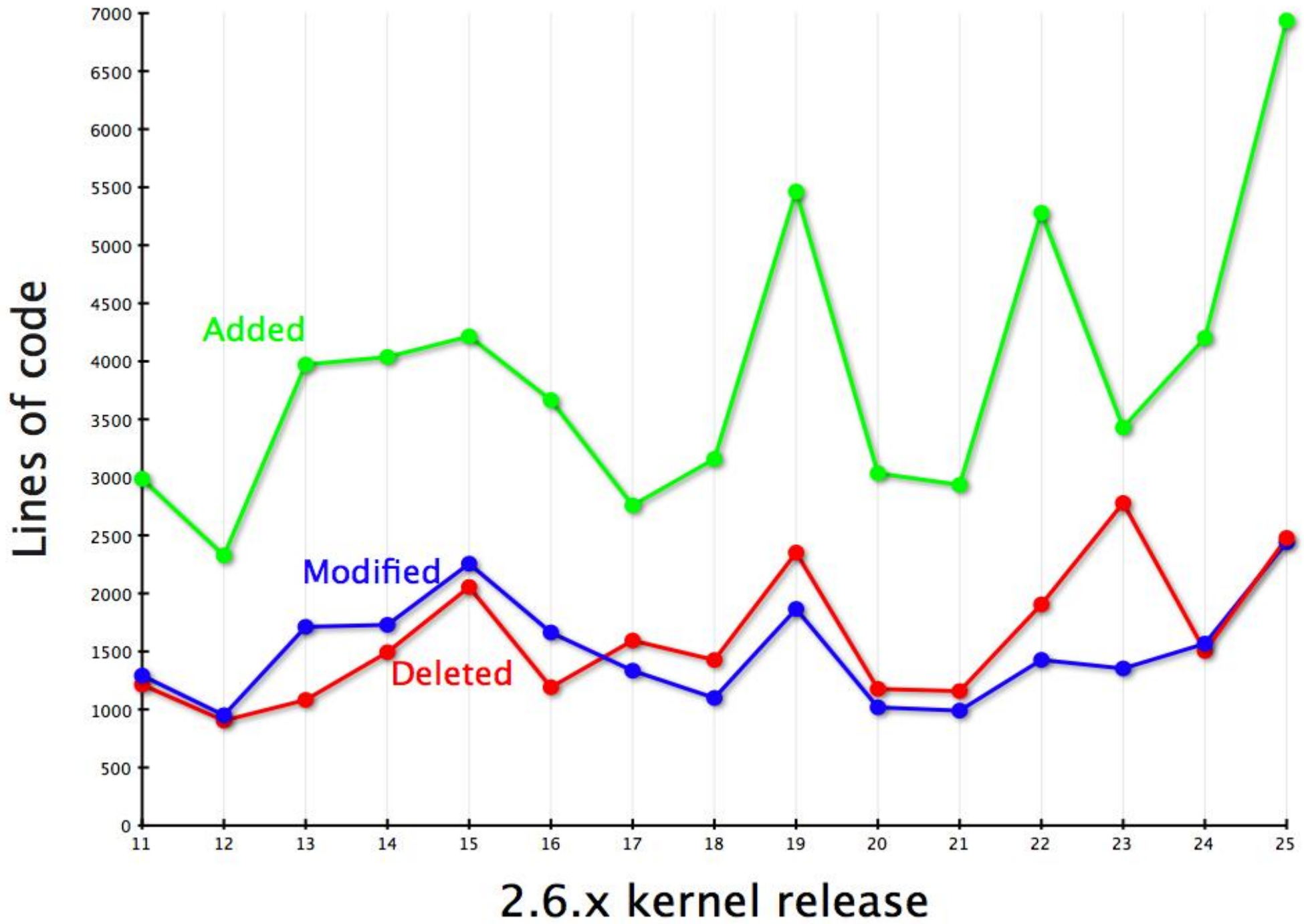
4,300 lines added

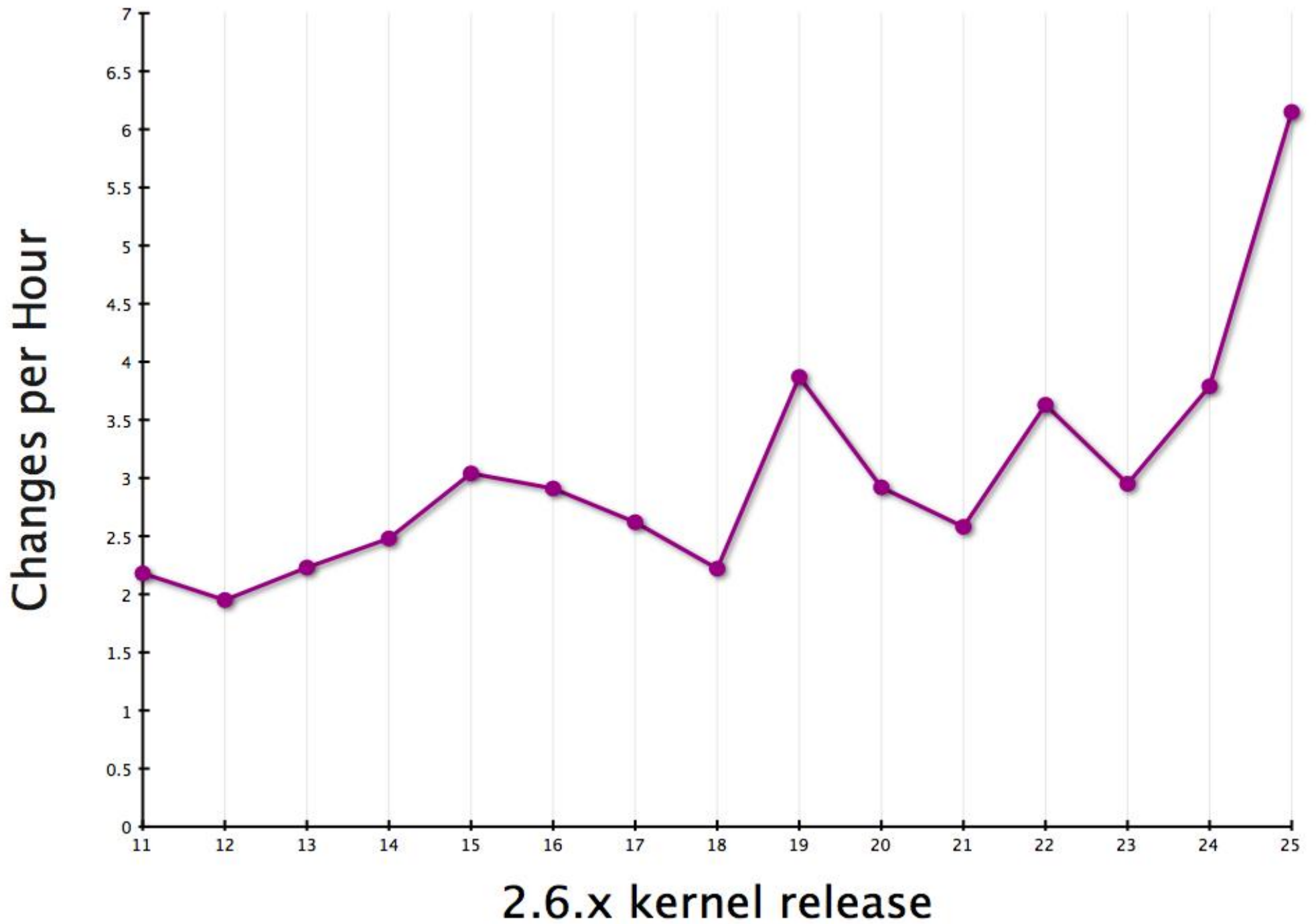
1,800 lines removed

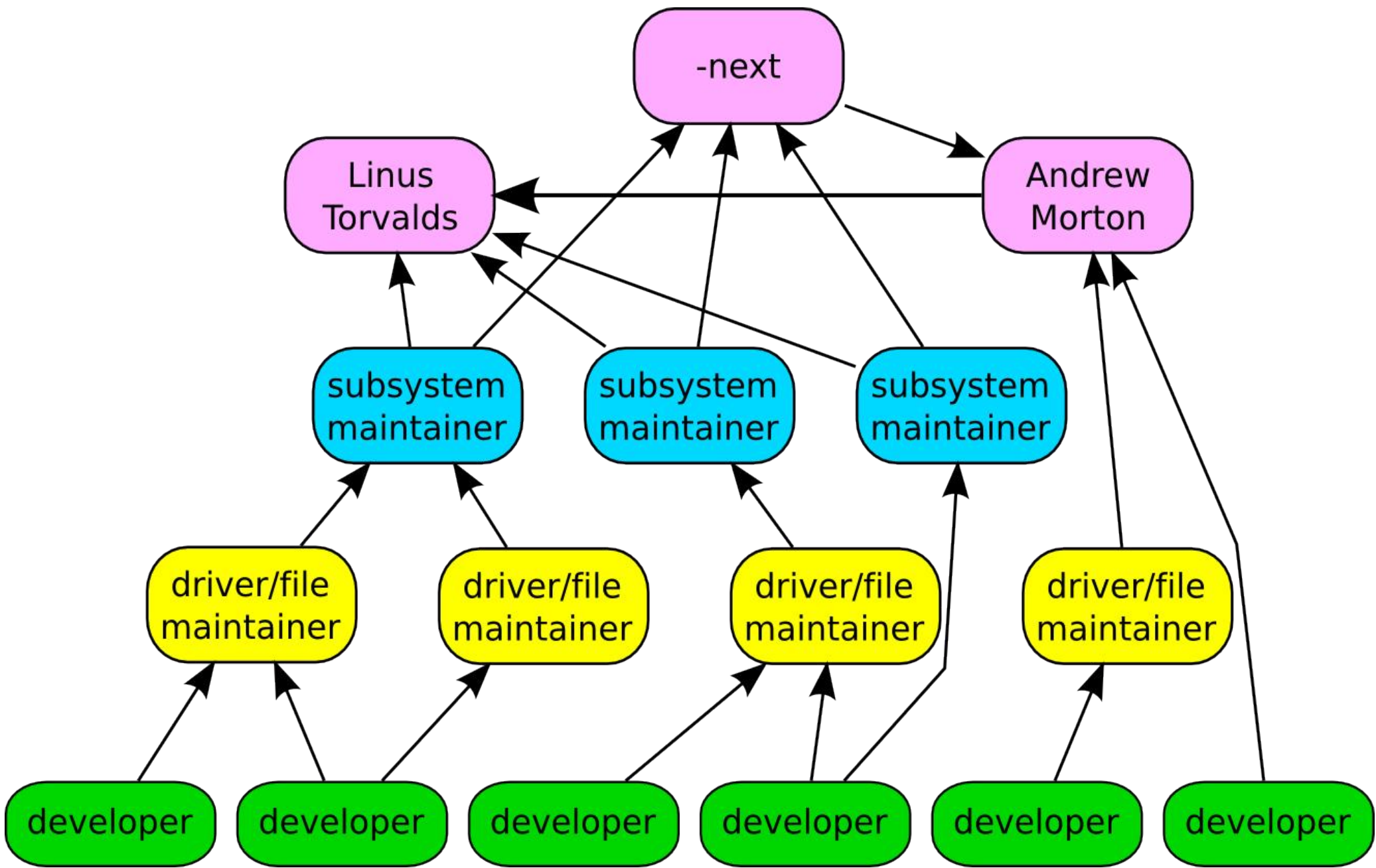
1,500 lines modified

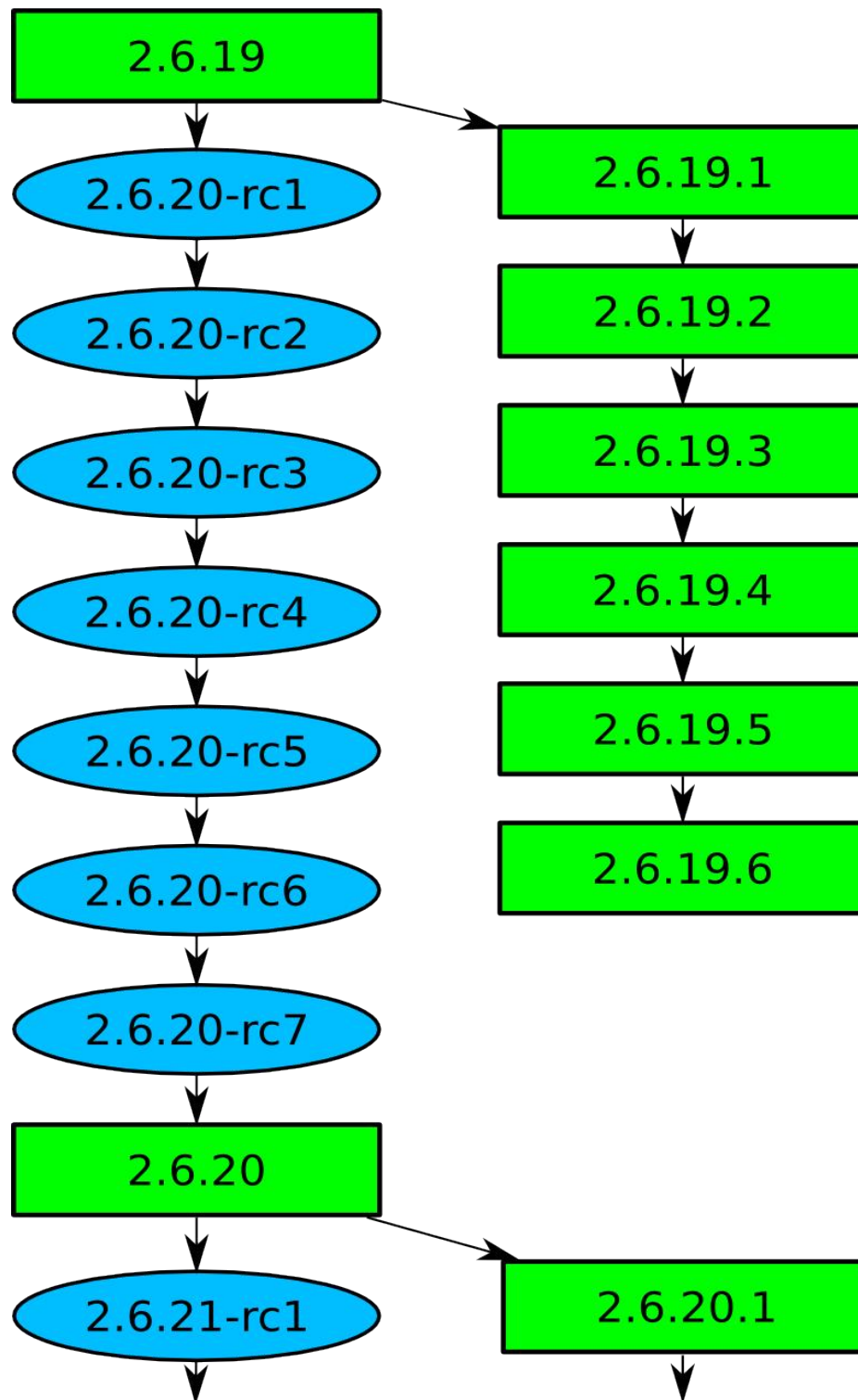
per day 2007 - 2008

3.69 changes per hour











**New release every
2³/₄ months**


```
if (error)
    goto Error;
```

```
/* first, register with generic layer */
kobj_err = set_name(&dev->kobj, "%s", dev->bus_id);
```

```
error = kobj_err_add(&dev->kobj, "name", kobj_err);
if (error)
    goto Error;
```

```
/* notify platform of device entry */
if (platform_notify)
    platform_notify(dev);
```

```
/* notify clients of device entry (new way) */
if (dev->bus)
    blocking_notifier_call_chain(&dev->bus->bus_notifier,
                                BUS_NOTIFY_ADD_DEVICE, dev);
```

```
error = device_create_file(dev, &uevent_attr);
if (error)
    goto attrError;
```

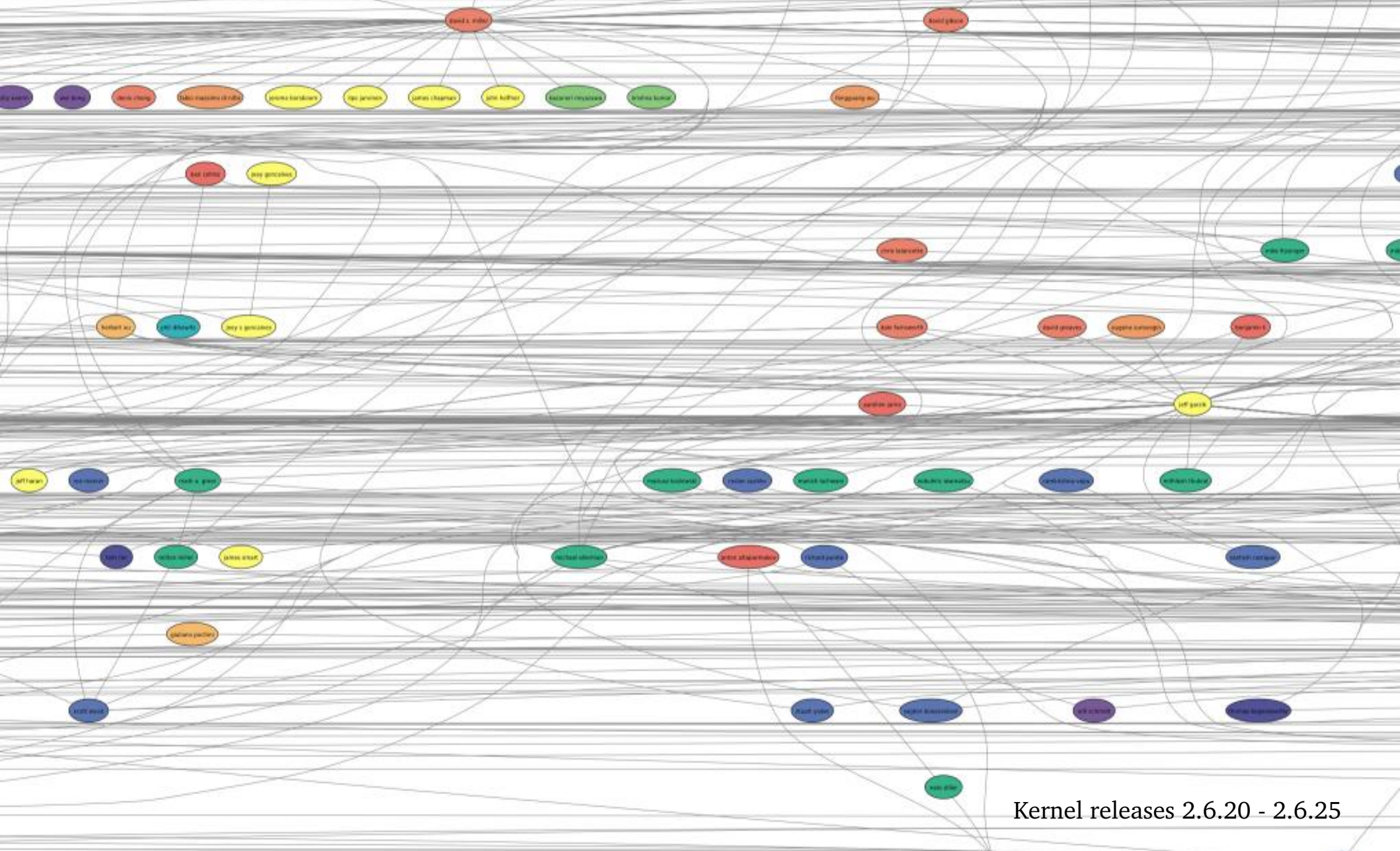
```
if (MAJOR(dev->devt)) {
    error = device_create_file(dev, &devt_attr);
    if (error)
        goto ueventattrError;
}
```

```
if (dev->class) {
    sysfs_create_link(&dev->kobj, &dev->class->subsys.kobj,
                    "subsystem");
    /* If this is not a "fake" compatible device, then create the
     * symlink from the class to the device. */
    if (dev->kobj.parent != &dev->class->subsys.kobj)
```

as of the 2.6.25 release

9.2 million lines

2399 Developers



Kernel releases 2.6.20 - 2.6.25

Top developers by quantity

Adrian Bunk 754

Al Viro 698

Thomas Gleixner 656

David S. Miller 655

Bart Zolnierkiewicz 637

Paul Mundt 610

Ralf Baechle 604

Ingo Molnar 596

Patrick McHardy 554

Tejun Heo 530

Top Signed-off-by:

Andrew Morton	9086
Linus Torvalds	8960
David S. Miller	4926
Jeff Garzik	2960
Ingo Molnar	2489
Greg Kroah-Hartman	2098
Thomas Gleixner	1098
Mauro Carvalho Chehab	1822
Paul Mackerras	1675
John Linville	1461

Who is funding this work?

- 1.
2. Red Hat 11.6%
3. IBM 7.5%
4. Novell 6.6%
- 5.
6. Intel 4.1%
7. Oracle 2.2%
8. Consultants 2.2%
9. Academia 1.5%
10. Renesas Technology 1.5%

Who is funding this work?

1. “Amateurs”	18.5%
2. Red Hat	11.6%
3. IBM	7.5%
4. Novell	6.6%
5. Unknown individuals	5.5%
6. Intel	4.1%
7. Oracle	2.2%
8. Consultants	2.2%
9. Academia	1.5%
10. Renesas Technology	1.5%

Who is funding this work?

...

13. Google

1.4%



Without Andrew

...

40. Google



27 Google employees contributed to the kernel in 2007-2008

```
2 N May 30 Robert P. J. Da (1.4K) "create_proc_read_entry" enforce read-only semantics?
3 N May 30 Jules Colding (3.8K) LSI MegaRAID problems
4 N May 30 Thomas Klein (1.3K) [PATCH 2.6.22-rc3] ehea: Fixed multi queue RX bug
5 N May 30 Geller Sandor (1.2K) HPT374 IDE problem with 2.6.21.* kernels
6 N May 30 Hagen Paul Pfei (3.5K) [PATCH] INTERNODE_CACHE_SHIFT redefinition for hot spot structur
7 N May 30 Zoltan Boszorme (0.9K) Re: Kernel 2.6.21.3 does not work with 8GB of RAM on Intel 965WH
8 N May 30 Justin Piszcz (1.8K) ↪
9 N May 30 Martin Steigerw (2.6K) Re: [PATCH] mainline kernel: fix printk()
10 N May 30 Matthias Kieh (2.1K) [PATCH] driver/vb/cpufreq/ucp: use init_proc_read_entry()
11 N May 30 Matthias Kaenic (2.4K) ↪
12 N May 30 Rankle_ (3.1K) [PATCH] merge dst_discard in & out into one, removed a duplicate
13 N May 30 Zoltan Boszorme (8.6K) MCP55 NCP problem?
14 N May 30 Zoltan Boszorme (4.0K) [PATCH] pci: fix pci error in pci2_02 - interrupt
15 N May 30 Adam Johnson (1.4K) ↪
16 N May 30 Bill Nottingham (4.5K) [PATCH] drivers/infiniband: fix comparison between unsigned and
17 N May 30 Bill Nottingham (5.1K) [PATCH] drivers/video: Fix comparisons between negative and unsi
18 N May 30 Bill Nottingham (2.4K) [PATCH] driver/net: fix comparison of unsigned < 0
19 N May 30 Bill Nottingham (2.8K) [PATCH] net: fix comparison of unsigned < 0
20 N May 30 Bill Nottingham (1.9K) [PATCH] net: fix comparison of unsigned
21 N May 30 Bill Nottingham (3.4K) [PATCH] alsa: fix comparison of unsigned < 0
22 N May 30 Takashi Iwai (3.6K) ↪
23 N May 30 Jiri Slaby (1.4K) ↪
24 N May 30 Stefan Richter (1.7K) [PATCH 2.6.21.3] ieee1394: eth1394: bring back a parent device
25 N May 30 Oleg Verych ( 110) Re: Jiffies wraparound is not treated in the schedstats
26 N May 29 Robert Hancock (4.0K) [PATCH -mm] 2/2: PCI: disable decode of IO/memory during BAR siz
27 N May 29 Robert Hancock (8.8K) [PATCH -mm] 1/2: MMCONFIG: validate against ACPI motherboard res
28 N May 29 Linus Torvalds (3.2K) ↪
29 N May 30 Matt Keenan (1.6K) ↪
30 N May 29 Robert Hancock (1.0K) [PATCH -mm] 0/2: PCI MMCONFIG-related updates
31 N May 29 Yinghai Lu (0.4K) kexec and aacraid broken
32 N May 29 Andrew Morton (2.9K) ↪
33 N May 30 Salyzyn, Mark (9.4K) ↪
34 N May 29 Yinghai Lu ( 18K) [PATCH 4/5] serial: convert early_uart to earlycon for 8250
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36 N May 29 Yinghai Lu (2.3K) [PATCH 3/5] x86: initial fixmap support
37 N May 29 Yinghai Lu (1.0K) [PATCH 2/5] console: console handover to preferred console
38 N May 29 Yinghai Lu (2.2K) [PATCH 1/5] console: more buf for index parsing
39 N May 30 Wang Zhenyu ( 12K) [resend] [AGPGART] intel_agp: use table for device probe
40 N May 30 Wang Zhenyu ( 19K) [resend] [AGPGART] intel_agp: cleanup intel private data
41 N May 30 Dave Airlie (2.0K) [git pull] drm fixes for 2.6.22-rc3
42 N May 29 Matt Helsley (8.2K) [RFC][PATCH] Replacing the /proc/<pid/self>/exe symlink code
```

Google employee contributions

1	N	May 30	Jan Cliburn	(1.5K)	Re: Problem with atl1 and msi in kernel 2.6.22-rc7	
2	N	May 30	Julian P. R.	(1.4K)	Re: [PATCH] drivers/usb/serial: add support for the ftdi-usb-to-serial driver	
3	N	May 30	Julian P. R.	(1.3K)	Re: [PATCH] drivers/usb/serial: add support for the ftdi-usb-to-serial driver	
4	N	May 30	Thomas Klein	(1.3K)	[PATCH 2.6.22-rc3] ehea: Fixed multi queue RX bug	
5	N	May 30	Geller Sandor	(1.2K)	HPT374 IDE problem with 2.6.21.* kernels	
6	N	May 30	Hager Paul Mei	(3.5K)	[PATCH] INTERNODE_CACHE_SHIFT: redefinition for hot spot structure	
7	N	May 30	Zoltan Boszormenyi	(2.4K)	Re: [PATCH] dma: does not work with 8GB of RAM on Intel 965WH	
8	N	May 30	Justin Piszcz	(1.8K)	Re: [PATCH] dma: does not work with 8GB of RAM on Intel 965WH	
9	N	May 30	Martin Steigerwald	(2.6K)	Re: [ck] Mainline plans	
10	N	May 30	Matt LaPlante	(2.4K)	[PATCH] drivers/block/ub.c: use list_for_each_entry()	
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14	N	May 30	Bill Nottingham	(4.5K)	[PATCH] qla2xxx: fix timeout for qla2x00_down_timeout	
15	N	May 30	Seok Kang	(1.8K)	Re: [PATCH] qla2xxx: fix timeout for qla2x00_down_timeout	
16	N	May 30	Bill Nottingham	(4.5K)	[PATCH] drivers/infiniband: fix comparison between unsigned and n	
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21	N	May 30	Bill Nottingham	(4.5K)	[PATCH] dma: fix comparison of unsigned < 0	
22	N	May 30	Takashi Iwai	(1.8K)	Re: [PATCH] dma: fix comparison of unsigned < 0	
23	N	May 30	Jiri Slaby	(1.4K)	Re: [PATCH] dma: fix comparison of unsigned < 0	
24	N	May 30	Stefan Richter	(1.7K)	[PATCH 2.6.21.3] ieee1394: eth1394: bring back a parent device	
25	N	May 30	Oleg Drokin	(1.1K)	Re: [PATCH] ieee1394: bring back a parent device	
26	N	May 29	Robert Hancock	(8.0K)	[PATCH -mm] 1/2: PCI: disable decoding of IO/memory during BAR size	
27	N	May 29	Robert Hancock	(8.8K)	[PATCH -mm] 1/2: MMCONFIG: validate against ACPI motherboard reso	
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31	N	May 29	Yinghai Lu	(0.4K)	kexec and aacraid broken	
32	N	May 29	Andrew Morton	(1.9K)	Re: kexec and aacraid broken	
33	N	May 29	Sally	(1.8K)	Re: kexec and aacraid broken	
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1	N	May 30	Jan Cliburn	(1.5K)	Re: Problem with at11 and msi in kernel 2.6.22-rc7	
2	N	May 30	Justin P. Ralston	(1.4K)	Re: [PATCH] pci: pci_readers: remove pci_readers_inquiry_callback?	
3	N	May 30	Julian Goldwyn	(3.3K)	Re: [PATCH] IDE: problems	
4	N	May 30	Thomas Klein	(1.3K)	[PATCH] 2.6.22-rc3] ehea: Fixed multi queue RX bug	
5	N	May 30	Geller Sandor	(1.2K)	HPT374 IDE problem with 2.6.21.* kernels	
6	N	May 30	Hagen Paul Pfei	(3.5K)	[PATCH] INTERNODE_CACHE_SHIFT redefinition for hot spot structure	
7	N	May 30	Zoltan Boszorme	(0.5K)	Re: Kernel 2.6.21.3 does not work with 8GB RAM on Intel 965WH	2
8	N	May 30	Justin Sz	(1.3K)		
9	Ns	May 30	Martin Steigerw	(2.6K)	Re: [lck] Mainline plans	
10	N	May 30	Matthias Kaehlc	(2.4K)	[PATCH] drivers/block/ub.c: use list_for_each_entry()	2
11	N	May 30	Matthias Kaehlc	(2.4K)		
12	N	May 30	Rankl	(8.4K)	Re: [PATCH] ide: discard in & out into one removed a duplicate	
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15	N	May 30	Geokman	(1.0K)		
16	N	May 30	Bill Nottingham	(1.0K)	[PATCH] drivers/usb/lcd: fix comparsion between unsigned and n	2
17	N	May 30	Bill Nottingham	(5.1K)	[PATCH] drivers/video: Fix comparisons between negative and unsig	
18	N	May 30	Bill Nottingham	(2.4K)	[PATCH] drivers/net: fix comparisons of unsigned < 0	1
19	N	May 30	Bill Nottingham	(1.9K)	[PATCH] mm: fix comparisons of unsigned < 0	1
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22	N	May 30	Akashi Tani	(0.6K)		
23	N	May 30	Jiri	(0.4K)		
24	N	May 30	Stefan Richter	(1.7K)	[PATCH 2.6.21.3] ieee1394: eth1394: bring back a parent device	
25	N	May 30	Oleg Veruch	(110)	Re: Tiffies wraparound is not treated in the schedstats	1
26	N	May 29	Robert Hancock	(0.0K)	[PATCH] pci: disable decode of IO/memory during BAR size	
27	N	May 29	Robert Hancock	(0.8K)	[PATCH] pci: CONFIG: validate against ACPI motherboard reso	
28	N	May 29	Linus Torvalds	(3.2K)		
29	N	May 30	Matt Krenn	(1.6K)		1
30	N	May 29	Robert Hancock	(0.0K)	[PATCH] pci: [mm] 0/2: PCI MMCONFIG-related updates	1
31	N	May 29	Yinghai Lu	(0.4K)	Re: [PATCH] ide: rexec and aacraid broken	
32	N	May 29	Andrew Morton	(2.9K)		
33	N	May 30	Malyzjn	(0.4K)		1
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q:Quit d:Del u:Undel s:Save m:Mail r:Reply g:Group ?:Help

Google employee contributions

```

1 N C May 30 Ja Cliburn (1.5K) Re: Problem with atl1 and msi in kernel 2.6.22-rc7
2 N C May 30 Ja Cliburn (1.4K) [PATCH] pci: add pci_early_init() after pci_early_init()
3 N C May 30 Jule Golob (3.8K) [PATCH] pci: pci_msi problems
4 N May 30 Thomas Klein (1.3K) [PATCH] 2.6.22-rc3] ehea: Fixed multi queue RX bug
5 N May 30 Geller Sandor (1.2K) HPT374 IDE problem with 2.6.21.* kernels
6 N May 30 Hagen Paul Pfei (3.5K) [PATCH] INTERNODE_CACHE_SHIFT redefinition for hot spot structure
7 N May 30 Zoltan Boszorme (0.9K) Re: Kernel 2.6.21.3 does not work with 8GB of RAM on Intel 965WH
8 N May 30 Justin Piszcz (1.8K) L-
9 N May 30 Marti Steigerw (2.6K) Re: [ck] Mainline plr
10 N May 30 Matthias Raenic (2.4K) [PATCH] pci: pci_msi problems
11 N May 30 Matthias Raenic (2.4K) L-
12 N May 30 Rankle_ (3.1K) [PATCH] merge dst_discard in & out into one, removed a duplicate
13 N May 30 Ralta Piszcz (8.2K) [PATCH] MCP55_NCQ problem?
14 N May 30 Bill Nottingham (1.0K) [PATCH] qla2xxx: fix timeout in qla2x00_down_timeout
15 N May 30 Seokmann Ju (1.4K) L-
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24 N May 30 Jefa Richter (1.7K) [PATCH] 2.6.21-3] ieee1394: eth1394: bring back a parent device
25 N May 30 Jleg (1.0K) [PATCH] sched: schedstats not treated in the schedstats
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```

1417. Masoud Asgharifard Sharbiani 1

1417. Mike Chan 1

1417. Ollie Wild 1

1417. Priyanka Gupta 1

1417. Ranjit Manomohan 1

1417. Rohit Seth 1

1417. Sam Jansen 1

1417. Warren Turkal 1

---Mutt: =linux-kernel [Msgs:7969 New:7550 Inc:8 48M]---(threads/reverse-date-received)----- (0%)---

New stuff in 2.6.26

Korina driver
superH MX-G
SH-MobileR2 CPU support
Solution Engine SH7721
ARM YL9200
Kwikbyte KB9260
Olimex SAM9-L9260
emQbit ECB_AT91
Digi ns921x processor
Nias SMX crypto
AMCC PPC460EX
Emerson KSI8560
WindRiver SBC8641D
Logitech Rumblepad 2
Renesas SH7760 I2c
SuperH Mobile I2C
PCI Express ASPM
security= boot option
NAT for SCTP, SCCP and UDP-lite
network window scaling w/ syncookies
network namespace work
mesh networking for mac80211
SELinux permissive types
realtime group scheduler work
SunOS binary support removed
read-only bind mounts
kdbb
PAT for x86
inode_getsecid()
ipc_getsecid()
ieee80211 MAC removed
generic semaphores
ata_port_operations inheritance
ns_to_ktime()
struct class_device removed
SEQ_SKIP allowed from show()
Wolfson WM9713 codecs
TI DAVINCI AC97
Emagic Audiowerk 2
x86 PC speakers
Asus AV100 (Xonar DX)
Micron MT9M001
Micron MT9V022
PXA27x Quick Capture
Kworld ATSC 120 tuners
cx23417 MPEG encoders
Integrant ITD1000 tuners
Philips TDA10048HN demodulators
Philips SAA7171/3/4 a/v decoders
Auvitek AU8522 demodulators
Samsung S5H1411-based tuners
Xen framebuffer
Xen keyboard
Xen mouse
Wolfson Microelectronics touchscreens
wireless Xbox 360 controller
Zhen Hua PPM-4CH transmitters
SPCP8x5 USB to serial
NCR 53c9x SCSI controller
Freescale 8610 and 5121 display
Intel 965G/965GM
TI OMAP sound controller
Eee PC function keys
Intel IXP4xx Ethernet
basic braille screen reader support
OLPC XO architecture support
virtual files in /proc/pid/mountinfo
/proc/vmallocinfo
NUMA for SPARC Niagra
Xen baloon driver
/dev/mem support removed
KVM for s390
KVM for PowerPC 440
KVM for ia64
perprocess secure bits
getrusage() RUSAGE_THREAD
partions with NBD
audit open file tests
/sys/class/bdi
shared writable mappings for FUSE
ioremap() always uncached on x86
/sys/kernel/slab/NAME/order
WARN_ON taints kernel
get_info() for /proc removed
proc_create_data()
object debugging infrastructure
Solarflare Comm Solarstorm SFC4000
Hauppauge HVR-1600 TV tuner card
WTF are you doing reading this
ISP 1760 USB host controller
Cypress c67x00 OTG controller
Intel PXA 27x USB controller
DEFINE_KLIST()
KLIST_INIT()
klist_add_after()
klist_add_before()
div_u64 and friends
sysfs_streq
MODULE_FORCE_LOAD

