The following is a list of files and features that are going to be
removed in the kernel source tree.  Every entry should contain what
exactly is going away, why it is happening, and who is going to be doing
the work.  When the feature is removed from the kernel, it should also
be removed from this file.

---

What:	PRISM54
When:	2.6.34

Why:	prism54 FullMAC PCI / Cardbus devices used to be supported only by the
	prism54 wireless driver. After Intersil stopped selling these
	devices in preference for the newer more flexible SoftMAC devices
	a SoftMAC device driver was required and prism54 did not support
	them. The p54pci driver now exists and has been present in the kernel
for
	a while. This driver supports both SoftMAC devices and FullMAC devices.
	The main difference between these devices was the amount of memory which
	could be used for the firmware. The SoftMAC devices support a smaller
	amount of memory. Because of this the SoftMAC firmware fits into FullMAC
	devices's memory. p54pci supports not only PCI / Cardbus but also USB
	and SPI. Since p54pci supports all devices prism54 supports
	you will have a conflict. I'm not quite sure how distributions are
	handling this conflict right now. prism54 was kept around due to
	claims users may experience issues when using the SoftMAC driver.
	Time has passed users have not reported issues. If you use prism54
	and for whatever reason you cannot use p54pci please let us know!
	E-mail us at: linux-wireless@vger.kernel.org

	For more information see the p54 wiki page:

	http://wireless.kernel.org/en/users/Drivers/p54

Who:	Luis R. Rodriguez <lrodriguez@atheros.com>

---

What:	IRQF_SAMPLE_RANDOM
Check:	IRQF_SAMPLE_RANDOM
When:	July 2009

Why:	Many of IRQF_SAMPLE_RANDOM users are technically bogus as entropy
	sources in the kernel's current entropy model. To resolve this, every
	input point to the kernel's entropy pool needs to better document the
	type of entropy source it actually is. This will be replaced with
	additional add_*_randomness functions in drivers/char/random.c

Who:	Robin Getz <rgetz@blackfin.uclinux.org> & Matt Mackall <mpm@selenic.com>

---

What:	Deprecated snapshot ioctls
When:	2.6.36

Why:	The ioctls in kernel/power/user.c were marked as deprecated long time

ago. Now they notify users about that so that they need to replace
their userspace. After some more time, remove them completely.

Who: Jiri Slaby <jirislaby@gmail.com>

---

What: The ieee80211_regdom module parameter
When: March 2010 / desktop catchup

Why: This was inherited by the CONFIG_WIRELESS_OLD_REGULATORY code,
and currently serves as an option for users to define an
ISO / IEC 3166 alpha2 code for the country they are currently
present in. Although there are userspace API replacements for this
through nl80211 distributions haven't yet caught up with implementing
decent alternatives through standard GUIs. Although available as an
option through iw or wpa_supplicant its just a matter of time before
distributions pick up good GUI options for this. The ideal solution
would actually consist of intelligent designs which would do this for
the user automatically even when travelling through different countries.
Until then we leave this module parameter as a compromise.

When userspace improves with reasonable widely-available alternatives
for
this we will no longer need this module parameter. This entry hopes that
by the super-futuristically looking date of "March 2010" we will have
such replacements widely available.

Who: Luis R. Rodriguez <lrodriguez@atheros.com>

---

What: dev->power.power_state
When: July 2007
Why: Broken design for runtime control over driver power states, confusing
driver-internal runtime power management with: mechanisms to support
system-wide sleep state transitions; event codes that distinguish
different phases of swsusp "sleep" transitions; and userspace policy
inputs. This framework was never widely used, and most attempts to
use it were broken. Drivers should instead be exposing domain-specific
interfaces either to kernel or to userspace.
Who: Pavel Machek <pavel@suse.cz>

---

What: Video4Linux API 1 ioctls and from Video devices.
When: July 2009
Files: include/linux/videodev.h
Check: include/linux/videodev.h
Why: V4L1 AP1 was replaced by V4L2 API during migration from 2.4 to 2.6
series. The old API have lots of drawbacks and don't provide enough
means to work with all video and audio standards. The newer API is
already available on the main drivers and should be used instead.
Newer drivers should use v4l_compat_translate_ioctl function to handle
old calls, replacing to newer ones.
Decoder iocts are using internally to allow video drivers to

communicate with video decoders. This should also be improved to allow
V4L2 calls being translated into compatible internal ioctls.
Compatibility ioctls will be provided, for a while, via
v4l1-compat module.
Who: Mauro Carvalho Chehab <mchehab@infradead.org>

---

What: PCMCIA control ioctl (needed for pcmcia-cs [cardmgr, cardctl])
When: 2.6.35/2.6.36
Files: drivers/pcmcia/: pcmcia_ioctl.c
Why: With the 16-bit PCMCIA subsystem now behaving (almost) like a
normal hotpluggable bus, and with it using the default kernel
infrastructure (hotplug, driver core, sysfs) keeping the PCMCIA
control ioctl needed by cardmgr and cardctl from pcmcia-cs is
unnecessary and potentially harmful (it does not provide for
proper locking), and makes further cleanups and integration of the
PCMCIA subsystem into the Linux kernel device driver model more
difficult. The features provided by cardmgr and cardctl are either
handled by the kernel itself now or are available in the new
pcmciautils package available at
http://kernel.org/pub/linux/utils/kernel/pcmcia/

For all architectures except ARM, the associated config symbol
has been removed from kernel 2.6.34; for ARM, it will be likely
be removed from kernel 2.6.35. The actual code will then likely
be removed from kernel 2.6.36.
Who: Dominik Brodowski <linux@dominikbrodowski.net>

---

What: sys_sysctl
When: September 2010
Option: CONFIG_SYSCTL_SYSCALL
Why: The same information is available in a more convenient from
/proc/sys, and none of the sysctl variables appear to be
important performance wise.

Binary sysctls are a long standing source of subtle kernel
bugs and security issues.

When I looked several months ago all I could find after
searching several distributions were 5 user space programs and
glibc (which falls back to /proc/sys) using this syscall.

The man page for sysctl(2) documents it as unusable for user
space programs.

sysctl(2) is not generally ABI compatible to a 32bit user
space application on a 64bit and a 32bit kernel.

For the last several months the policy has been no new binary
sysctls and no one has put forward an argument to use them.

Binary sysctls issues seem to keep happening appearing so
properly deprecating them (with a warning to user space) and a

2 year grace warning period will mean eventually we can kill
them and end the pain.

In the mean time individual binary sysctls can be dealt with
in a piecewise fashion.

Who: Eric Biederman <ebiederm@xmission.com>

---

What: remove EXPORT_SYMBOL(kernel_thread)
When: August 2006
Files: arch/*/kernel/*_ksyms.c
Check: kernel_thread
Why: kernel_thread is a low-level implementation detail. Drivers should
use the <linux/kthread.h> API instead which shields them from
implementation details and provides a higherlevel interface that
prevents bugs and code duplication
Who: Christoph Hellwig <hch@lst.de>

---

What: Unused EXPORT_SYMBOL/EXPORT_SYMBOL_GPL exports
(temporary transition config option provided until then)
The transition config option will also be removed at the same time.
When: before 2.6.19
Why: Unused symbols are both increasing the size of the kernel binary
and are often a sign of "wrong API"
Who: Arjan van de Ven <arjan@linux.intel.com>

---

What: PHYSDEVPATH, PHYSDEVBUS, PHYSDEVDRIVER in the uevent environment
When: October 2008
Why: The stacking of class devices makes these values misleading and
inconsistent.
Class devices should not carry any of these properties, and bus
devices have SUBSYTEM and DRIVER as a replacement.
Who: Kay Sievers <kay.sievers@suse.de>

---

What: ACPI procfs interface
When: July 2008
Why: ACPI sysfs conversion should be finished by January 2008.
ACPI procfs interface will be removed in July 2008 so that
there is enough time for the user space to catch up.
Who: Zhang Rui <rui.zhang@intel.com>

---

What: /proc/acpi/button
When: August 2007
Why: /proc/acpi/button has been replaced by events to the input layer
since 2.6.20.
Who: Len Brown <len.brown@intel.com>

---

What:	/proc/acpi/event
When:	February 2008
Why:	/proc/acpi/event has been replaced by events via the input layer
	and netlink since 2.6.23.
Who:	Len Brown <len.brown@intel.com>

---

What:	i386/x86_64 bzImage symlinks
When:	April 2010

Why:	The i386/x86_64 merge provides a symlink to the old bzImage
	location so not yet updated user space tools, e.g. package
	scripts, do not break.
Who:	Thomas Gleixner <tglx@linutronix.de>

---

What:	GPIO autorequest on gpio_direction_{input,output}() in gpiolib
When:	February 2010
Why:	All callers should use explicit gpio_request()/gpio_free().
	The autorequest mechanism in gpiolib was provided mostly as a
	migration aid for legacy GPIO interfaces (for SOC based GPIOs).
	Those users have now largely migrated.  Platforms implementing
	the GPIO interfaces without using gpiolib will see no changes.
Who:	David Brownell <dbrownell@users.sourceforge.net>
---

What:	b43 support for firmware revision < 410
When:	The schedule was July 2008, but it was decided that we are going to keep
the
	code as long as there are no major maintanance headaches.
	So it _could_ be removed _any_ time now, if it conflicts with something
new.
Why:	The support code for the old firmware hurts code
readability/maintainability
	and slightly hurts runtime performance. Bugfixes for the old firmware
	are not provided by Broadcom anymore.
Who:	Michael Buesch <mb@bu3sch.de>

---

What:	/sys/o2cb symlink
When:	January 2010
Why:	/sys/fs/o2cb is the proper location for this information - /sys/o2cb
	exists as a symlink for backwards compatibility for old versions of
	ocfs2-tools. 2 years should be sufficient time to phase in new versions
	which know to look in /sys/fs/o2cb.
Who:	ocfs2-devel@oss.oracle.com

---

What:	Ability for non root users to shm_get hugetlb pages based on mlock

resource limits
When: 2.6.31
Why: Non root users need to be part of /proc/sys/vm/hugetlb_shm_group or have CAP_IPC_LOCK to be able to allocate shm segments backed by huge pages. The mlock based rlimit check to allow shm hugetlb is inconsistent with mmap based allocations. Hence it is being deprecated.
Who: Ravikiran Thirumalai <kiran@scalex86.org>

---

What: CONFIG_THERMAL_HWMON
When: January 2009
Why: This option was introduced just to allow older lm-sensors userspace to keep working over the upgrade to 2.6.26. At the scheduled time of removal fixed lm-sensors (2.x or 3.x) should be readily available.
Who: Rene Herman <rene.herman@gmail.com>

---

What: Code that is now under CONFIG_WIRELESS_EXT_SYSFS (in net/core/net-sysfs.c)
When: After the only user (hal) has seen a release with the patches for enough time, probably some time in 2010.
Why: Over 1K .text/.data size reduction, data is available in other ways (ioctls)
Who: Johannes Berg <johannes@sipsolutions.net>

---

What: CONFIG_NF_CT_ACCT
When: 2.6.29
Why: Accounting can now be enabled/disabled without kernel recompilation. Currently used only to set a default value for a feature that is also controlled by a kernel/module/sysfs/sysctl parameter.
Who: Krzysztof Piotr Oledzki <ole@ans.pl>

---

What: sysfs ui for changing p4-clockmod parameters
When: September 2009
Why: See commits 129f8ae9b1b5be94517da76009ea956e89104ce8 and e088e4c9cdb618675874becb91b2fd581ee707e6.
Removal is subject to fixing any remaining bugs in ACPI which may cause the thermal throttling not to happen at the right time.
Who: Dave Jones <davej@redhat.com>, Matthew Garrett <mjg@redhat.com>

---

What: __do_IRQ all in one fits nothing interrupt handler
When: 2.6.32
Why: __do_IRQ was kept for easy migration to the type flow handlers. More than two years of migration time is enough.
Who: Thomas Gleixner <tglx@linutronix.de>

---

What:	fakephp and associated sysfs files in /sys/bus/pci/slots/
When:	2011
Why:	In 2.6.27, the semantics of /sys/bus/pci/slots was redefined to
	represent a machine's physical PCI slots. The change in semantics
	had userspace implications, as the hotplug core no longer allowed
	drivers to create multiple sysfs files per physical slot (required
	for multi-function devices, e.g.). fakephp was seen as a developer's
	tool only, and its interface changed. Too late, we learned that
	there were some users of the fakephp interface.

	In 2.6.30, the original fakephp interface was restored. At the same
	time, the PCI core gained the ability that fakephp provided, namely
	function-level hot-remove and hot-add.

	Since the PCI core now provides the same functionality, exposed in:

		/sys/bus/pci/rescan
		/sys/bus/pci/devices/.../remove
		/sys/bus/pci/devices/.../rescan

	there is no functional reason to maintain fakephp as well.

	We will keep the existing module so that 'modprobe fakephp' will
	present the old /sys/bus/pci/slots/... interface for compatibility,
	but users are urged to migrate their applications to the API above.

	After a reasonable transition period, we will remove the legacy
	fakephp interface.
Who:	Alex Chiang <achiang@hp.com>

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What:	CONFIG_RFKILL_INPUT
When:	2.6.33
Why:	Should be implemented in userspace, policy daemon.
Who:	Johannes Berg <johannes@sipsolutions.net>

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What:	CONFIG_INOTIFY
When:	2.6.33
Why:	last user (audit) will be converted to the newer more generic
	and more easily maintained fsnotify subsystem
Who:	Eric Paris <eparis@redhat.com>

---------------------------

What:	lock_policy_rwsem_* and unlock_policy_rwsem_* will not be
	exported interface anymore.
When:	2.6.33
Why:	cpu_policy_rwsem has a new cleaner definition making it local to
	cpufreq core and contained inside cpufreq.c. Other dependent
	drivers should not use it in order to safely avoid lockdep issues.
Who:	Venkatesh Pallipadi <venkatesh.pallipadi@intel.com>

---

What: sound-slot/service-* module aliases and related clutters in sound/sound_core.c
When: August 2010
Why: OSS sound_core grabs all legacy minors (0-255) of SOUND_MAJOR (14) and requests modules using custom sound-slot/service-* module aliases. The only benefit of doing this is allowing use of custom module aliases which might as well be considered a bug at this point. This preemptive claiming prevents alternative OSS implementations.

Till the feature is removed, the kernel will be requesting both sound-slot/service-* and the standard char-major-* module aliases and allow turning off the pre-claiming selectively via CONFIG_SOUND_OSS_CORE_PRECLAIM and soundcore.preclaim_oss kernel parameter.

After the transition phase is complete, both the custom module aliases and switches to disable it will go away. This removal will also allow making ALSA OSS emulation independent of sound_core. The dependency will be broken then too.
Who: Tejun Heo <tj@kernel.org>

---

What: Support for VMware's guest paravirtuliazation technique [VMI] will be dropped.
When: 2.6.37 or earlier.
Why: With the recent innovations in CPU hardware acceleration technologies from Intel and AMD, VMware ran a few experiments to compare these techniques to guest paravirtualization technique on VMware's platform. These hardware assisted virtualization techniques have outperformed the performance benefits provided by VMI in most of the workloads. VMware expects that these hardware features will be ubiquitous in a couple of years, as a result, VMware has started a phased retirement of this feature from the hypervisor. We will be removing this feature from the Kernel too. Right now we are targeting 2.6.37 but can retire earlier if technical reasons (read opportunity to remove major chunk of pvops) arise.

Please note that VMI has always been an optimization and non-VMI kernels still work fine on VMware's platform.
Latest versions of VMware's product which support VMI are,
Workstation 7.0 and VSphere 4.0 on ESX side, future maintainence releases for these products will continue supporting VMI.

For more details about VMI retirement take a look at this,
http://blogs.vmware.com/guestosguide/2009/09/vmi-retirement.html

Who: Alok N Kataria <akataria@vmware.com>

---

What: Support for lcd_switch and display_get in asus-laptop driver
When: March 2010

Why: These two features use non-standard interfaces. There are the only features that really need multiple path to guess what's the right method name on a specific laptop.

Removing them will allow to remove a lot of code an significantly clean the drivers.

This will affect the backlight code which won't be able to know if the backlight is on or off. The platform display file will also be write only (like the one in eeepc-laptop).

This should'nt affect a lot of user because they usually know when their display is on or off.

Who: Corentin Chary <corentin.chary@gmail.com>

---

What: usbvideo quickcam_messenger driver
When: 2.6.35
Files: drivers/media/video/usbvideo/quickcam_messenger.[ch]
Why: obsolete v4l1 driver replaced by gspca_stv06xx
Who: Hans de Goede <hdegoede@redhat.com>

---

What: ov511 v4l1 driver
When: 2.6.35
Files: drivers/media/video/ov511.[ch]
Why: obsolete v4l1 driver replaced by gspca_ov519
Who: Hans de Goede <hdegoede@redhat.com>

---

What: w9968cf v4l1 driver
When: 2.6.35
Files: drivers/media/video/w9968cf*.[ch]
Why: obsolete v4l1 driver replaced by gspca_ov519
Who: Hans de Goede <hdegoede@redhat.com>

---

What: ovcamchip sensor framework
When: 2.6.35
Files: drivers/media/video/ovcamchip/*
Why: Only used by obsoleted v4l1 drivers
Who: Hans de Goede <hdegoede@redhat.com>

---

What: stv680 v4l1 driver
When: 2.6.35
Files: drivers/media/video/stv680.[ch]
Why: obsolete v4l1 driver replaced by gspca_stv0680
Who: Hans de Goede <hdegoede@redhat.com>

---

What:	zc0301 v4l driver
When:	2.6.35
Files:	drivers/media/video/zc0301/*
Why:	Duplicate functionality with the gspca_zc3xx driver, zc0301 only
	supports 2 USB-ID's (because it only supports a limited set of
	sensors) wich are also supported by the gspca_zc3xx driver
	(which supports 53 USB-ID's in total)
Who:	Hans de Goede <hdegoede@redhat.com>

---

What:	sysfs-class-rfkill state file
When:	Feb 2014
Files:	net/rfkill/core.c
Why:	Documented as obsolete since Feb 2010. This file is limited to 3
	states while the rfkill drivers can have 4 states.
Who:	anybody or Florian Mickler <florian@mickler.org>

---

What:	sysfs-class-rfkill claim file
When:	Feb 2012
Files:	net/rfkill/core.c
Why:	It is not possible to claim an rfkill driver since 2007. This is
	Documented as obsolete since Feb 2010.
Who:	anybody or Florian Mickler <florian@mickler.org>

---

What:	capifs
When:	February 2011
Files:	drivers/isdn/capi/capifs.*
Why:	udev fully replaces this special file system that only contains CAPI
	NCCI TTY device nodes. User space (pppdcapiplugin) works without
	noticing the difference.
Who:	Jan Kiszka <jan.kiszka@web.de>

---

What:	KVM memory aliases support
When:	July 2010
Why:	Memory aliasing support is used for speeding up guest vga access
	through the vga windows.

	Modern userspace no longer uses this feature, so it's just bitrotted
	code and can be removed with no impact.
Who:	Avi Kivity <avi@redhat.com>

---

What:	xtime, wall_to_monotonic
When:	2.6.36+
Files:	kernel/time/timekeeping.c include/linux/time.h
Why:	Cleaning up timekeeping internal values. Please use

existing timekeeping accessor functions to access
the equivalent functionality.
Who: John Stultz <johnstul@us.ibm.com>

---

What: KVM kernel-allocated memory slots
When: July 2010
Why: Since 2.6.25, kvm supports user-allocated memory slots, which are
much more flexible than kernel-allocated slots. All current userspace
supports the newer interface and this code can be removed with no
impact.
Who: Avi Kivity <avi@redhat.com>

---

What: KVM paravirt mmu host support
When: January 2011
Why: The paravirt mmu host support is slower than non-paravirt mmu, both
on newer and older hardware. It is already not exposed to the guest,
and kept only for live migration purposes.
Who: Avi Kivity <avi@redhat.com>

---

What: iwlwifi 50XX module parameters
When: 2.6.40
Why: The "..50" modules parameters were used to configure 5000 series and
up devices; different set of module parameters also available for 4965
with same functionalities. Consolidate both set into single place
in drivers/net/wireless/iwlwifi/iwl-agn.c

Who: Wey-Yi Guy <wey-yi.w.guy@intel.com>

---

What: iwl4965 alias support
When: 2.6.40
Why: Internal alias support has been present in module-init-tools for some
time, the MODULE_ALIAS("iwl4965") boilerplate aliases can be removed
with no impact.

Who: Wey-Yi Guy <wey-yi.w.guy@intel.com>

---

What: xt_NOTRACK
Files: net/netfilter/xt_NOTRACK.c
When: April 2011
Why: Superseded by xt_CT
Who: Netfilter developer team <netfilter-devel@vger.kernel.org>

---

What: video4linux /dev/vtx teletext API support
When: 2.6.35

Files: drivers/media/video/saa5246a.c drivers/media/video/saa5249.c
include/linux/videotext.h
Why: The vtx device nodes have been superseded by vbi device nodes
for many years. No applications exist that use the vtx support.
Of the two i2c drivers that actually support this API the saa5249
has been impossible to use for a year now and no known hardware
that supports this device exists. The saa5246a is theoretically
supported by the old mxb boards, but it never actually worked.

In summary: there is no hardware that can use this API and there
are no applications actually implementing this API.

The vtx support still reserves minors 192-223 and we would really
like to reuse those for upcoming new functionality. In the unlikely
event that new hardware appears that wants to use the functionality
provided by the vtx API, then that functionality should be build
around the sliced VBI API instead.
Who: Hans Verkuil <hverkuil@xs4all.nl>

---

What: IRQF_DISABLED
When: 2.6.36
Why: The flag is a NOOP as we run interrupt handlers with interrupts disabled
Who: Thomas Gleixner <tglx@linutronix.de>

---

What: old ieee1394 subsystem (CONFIG_IEEE1394)
When: 2.6.37
Files: drivers/ieee1394/ except init_ohci1394_dma.c
Why: superseded by drivers/firewire/ (CONFIG_FIREWIRE) which offers more
features, better performance, and better security, all with smaller
and more modern code base
Who: Stefan Richter <stefanr@s5r6.in-berlin.de>

---

What: The acpi_sleep=s4_nonvs command line option
When: 2.6.37
Files: arch/x86/kernel/acpi/sleep.c
Why: superseded by acpi_sleep=nonvs
Who: Rafael J. Wysocki <rjw@sisk.pl>

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