# Modern Configuration API for Wireless Networking

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Participation
Conclusion

Who am I?
Why am I here?

# Who am I?

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## Why am I here?

cfg80211 is coming!

- More modern, extensible, and sane than wireless extensions...
- Functionality is proper superset of wireless extensions...
- Wireless extensions is the walking dead!

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## Wireless Extensions

The "wireless extensions" API is ancient and venerable?

- Based upon the IOCTL system call...
- Drivers forced to reimplement lots of code...
- Specification is vague about behavioral details...
- Semantics are based on individual attributes rather than specific actions...
- Supported functions are not easily discoverable...
- Get the picture?

## cfg80211

The new configuration API for wireless is cfg80211...

- Built around Netlink sockets (a.k.a. nl80211)...
- Drivers implement a small set of configuration methods...
- Proper implementation behavior is clearly defined...
- Semantics are based on flows defined in the IEEE802.11 specification...
- Easily supports new functionality (e.g. regulatory enforcement).

A wireless extensions implementation on top of cfg80211 is provided for backward compatibility!

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## Driver Support

Support for cfg80211 is growing!

- mac80211-based drivers support cfg80211...
- So does iwm3200wifi...
- So does rndis_wlan...
- The orinoco driver is heading that way...
- And ipw2200 has started an implementation too!

But, there is still a lot of work to be done...

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## Userland Tools

Yes, tools are available!

- crda feeds regulatory rules to the kernel...
- iw replaces wireless-tools package (i.e. iwconfig, etc)...
- hostapd understands nl80211...
- wpa_supplicant supports nl80211 "driver" (i.e. -Dnl80211)...
- You are using wpa_supplicant, right??

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## Driver Porting

Drivers need to be ported to cfg80211...

- Older drivers w/o active maintainers (e.g. airo, atmel, zd1201)...
- Not-so-old drivers too (e.g. ps3_gelic_wireless)...
- "Staging" drivers that don't/won't use mac80211...

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## Userland Bits

Ideas for cfg80211-related work in userland...

- crda helper/replacement (e.g. geo-location)
- Mesh network management
- 802.11 peer-to-peer service manager
- Bluetooth 3.0 AMP control

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# E-mail, Wiki, IRC

- linux-wireless@vger.kernel.org
- http://wireless.kernel.org
- #linux-wireless on Freenode

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## Contact

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Slides available:
`http://www.kernel.org/pub/linux/kernel/people/`
`linville/lpc2009/`