

OpenWrt: 10 years of fun with Embedded Devices

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Early days of OpenWrt

- Built for WRT54G
- Created from uClibc Buildroot
- Used Linksys GPL tarball directly
- Later reworked for standalone build
- Linux 2.4 kernel updated
- Build system rewrite

Development after White Russian

- Focus shifts away from Broadcom 47xx
- Multiplatform support
- Build system rewrite
- New config system: UCI
- New web interface: LuCI

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          |__| W I R E L E S S   F R E E D O M

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KAMIKAZE (8.09.2, r18961) -----

- * 10 oz Vodka Shake well with ice and strain
- * 10 oz Triple sec mixture into 10 shot glasses.
- * 10 oz lime juice Salute!

Development after Kamikaze

- Main focus: stabilization
- More targets
- More packages
- GCC updates

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Backfire (10.03.1, r29592) -----

- * 1/3 shot Kahlua In a shot glass, layer Kahlua
- * 1/3 shot Bailey's on the bottom, then Bailey's,
- * 1/3 shot Vodka then Vodka.

Development after Backfire

- Linux 2.4 support dropped
- Big user space overhaul begins
- Work on IPv6 integration

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ATTITUDE ADJUSTMENT (12.09, r36088)

- ```

* 1/4 oz Vodka Pour all ingredients into mixing
* 1/4 oz Gin tin with ice, strain into glass.
* 1/4 oz Amaretto
* 1/4 oz Triple sec
* 1/4 oz Peach schnapps
* 1/4 oz Sour mix
* 1 splash Cranberry juice

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# User space overhaul

- Components
  - ubus - system RPC service
  - netifd - network setup daemon
  - procd - process monitoring
- Features:
  - System wide config reload support
  - Automatic service restart
  - Config validation in backend
  - Web API via JSON-RPC

# IPv6 integration

- New user space stack, written from scratch
- Small code size
- netifd tracks prefixes and delegations
- odhcp6c - RA / DHCPv6 client
- odhcpd - routing & address announcement / delegation

# LuCI2 - New Web UI

- Incremental rewrite of existing LuCI code
- CGI + Lua Templating  $\Rightarrow$  Javascript + JSON-RPC
- Faster code
- Better modularity

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BARRIER BREAKER  
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- \* 1/2 oz Galliano
  - \* 4 oz cold Coffee
  - \* 1 1/2 oz Dark Rum
  - \* 2 tsp. Creme de Cacao
- Pour all ingredients into an irish coffee mug filled with crushed ice. Stir.

## Collaboration with industry vendors

- Some talks with router vendors (e.g. Linksys)
- Strange adoption by a few ODMs
- Better approach: collaboration with chip vendors
  - Qualcomm Atheros
  - Lantiq
  - MediaTek/Ralink

# Collaboration with chip vendors

- Differences in motivation
  - OpenWrt: Code quality, long term health
  - Vendors: Cost reduction, time to market
- Red tape, bureaucracy
- Licensing / IP issues
- Development process issues

## Related project activity

- Upstream integration of our patches
- Freifunk and other mesh network communities
- Bufferbloat.net (CeroWrt)
- IETF IPv6 integration projects (HIPnet, HomeNet)

Thank you for listening

Questions?