

Android Kernel Upstreaming

Status

Android Upstreaming Accomplishments

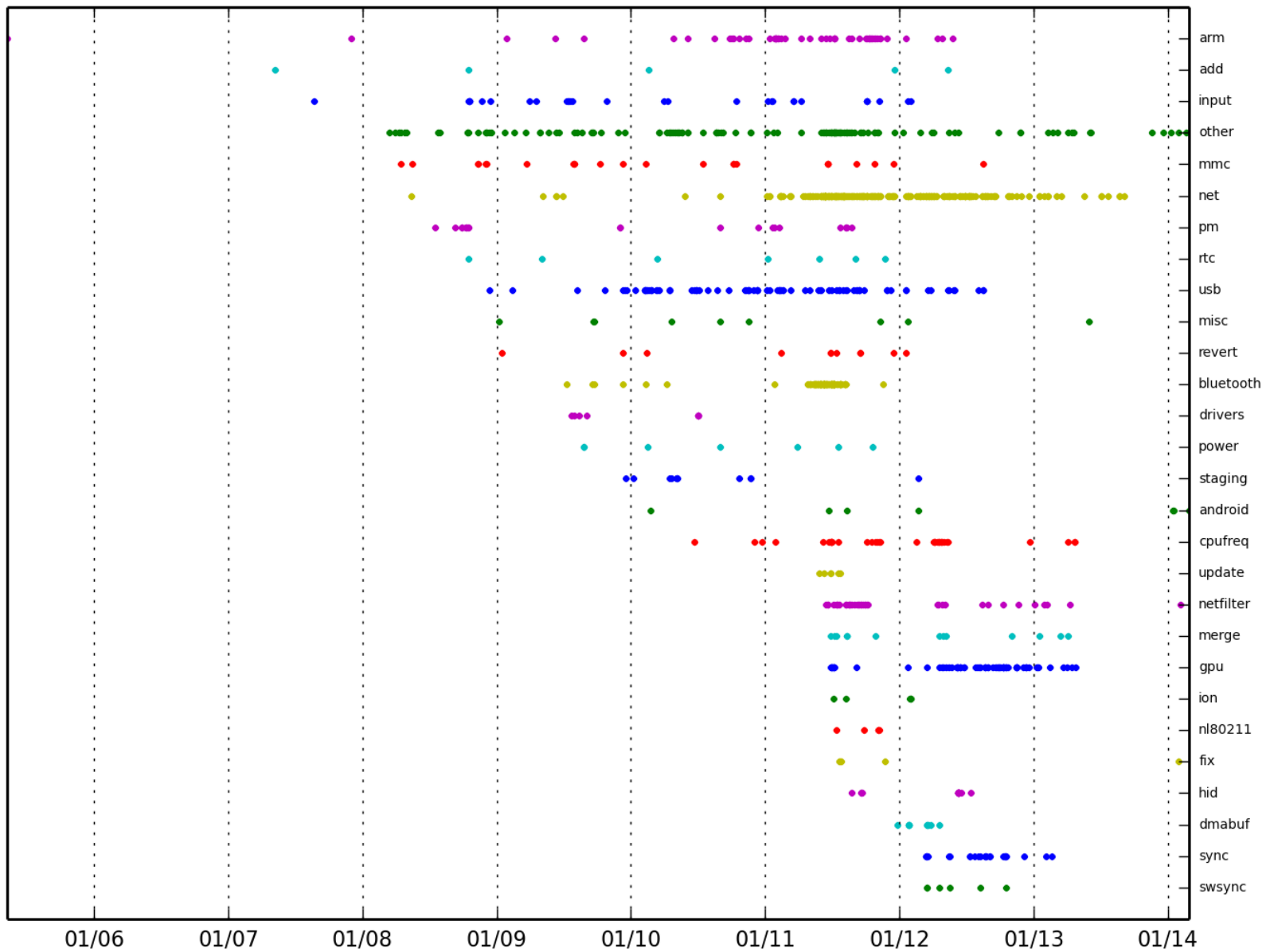
Properly upstreamed

- alarm-timers (alarm-dev)
- evdev-timestamps (monotonic evdev)
- wakeup_sources (wakelocks)
- extcon (switch class)
- pstore-ram (persistent_ram)
- sysrq-keyreset (keyreset)
- nfacct-quota (xt_quota2)
- mempressure notifiers (low-memory-killer)
- vfat-volumeid
- suspend-time-logging & lockup-detection
- wakeup_source enablement (RTC, power-supply, MMC)
- Various MMC-fixes
- ConfigFS Gadget (partial Android Gadget)
- memfd (partial ashmem functionality)

Merged into staging

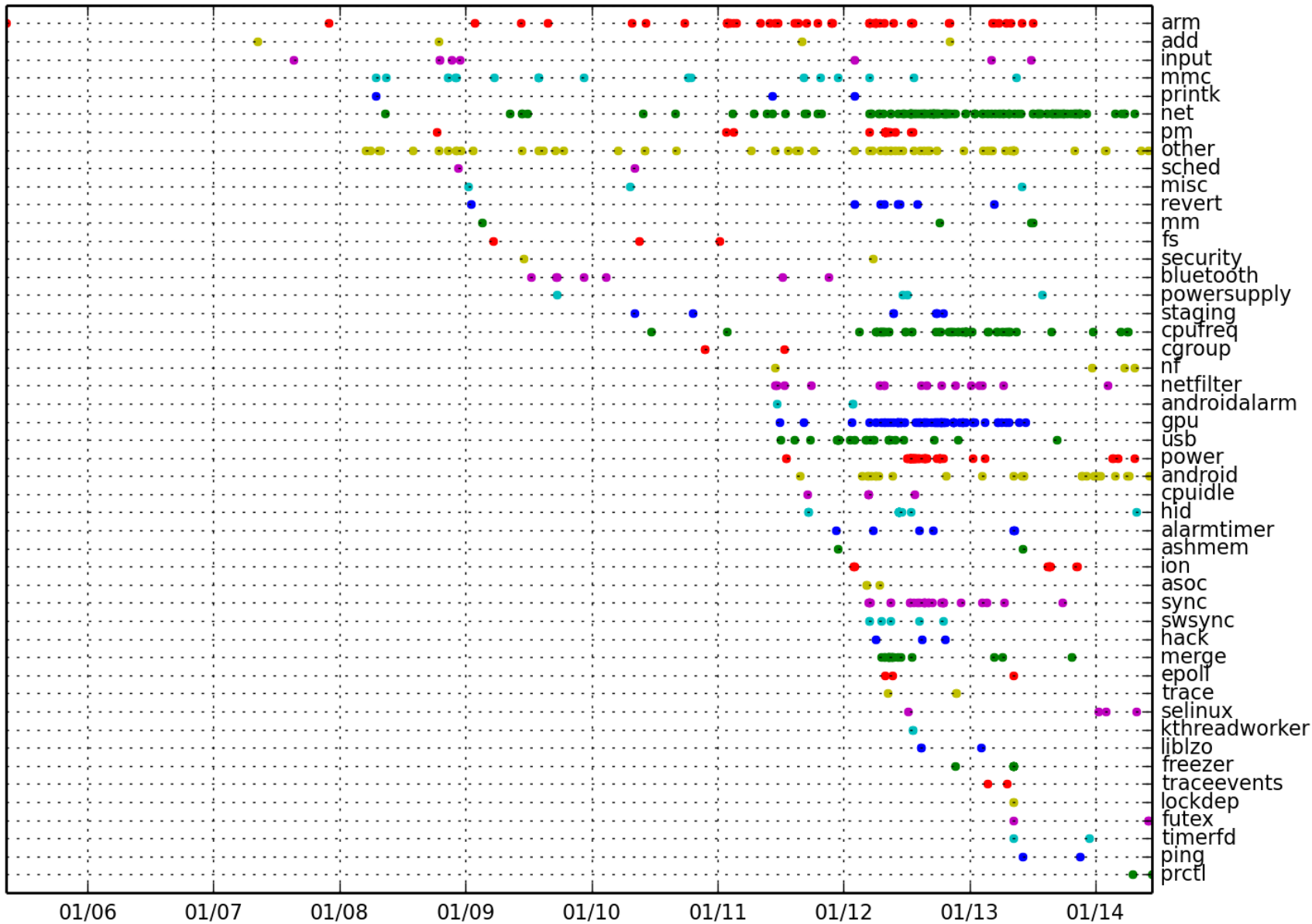
- alarm-dev*
- ashmem
- binder
- ION
- logger*
- low-memory-killer*
- ~~persistent_ram~~
- sync
- timed gpio/output

* Suggested candidates for removal (for later discussion)



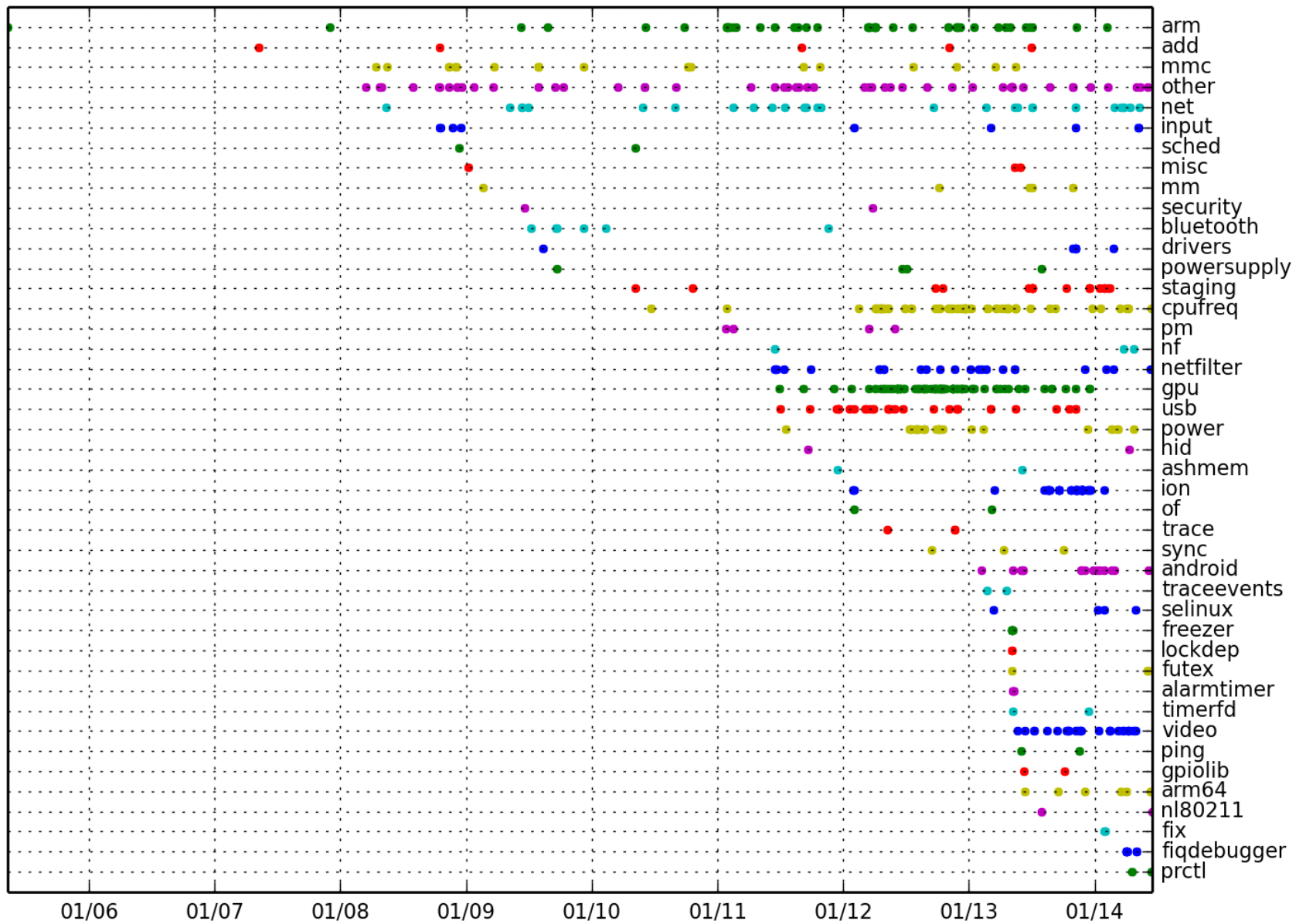
android-3.0: 1045 patches

610 files changed, 182,670 insertions(+), 1,992 deletions(-)



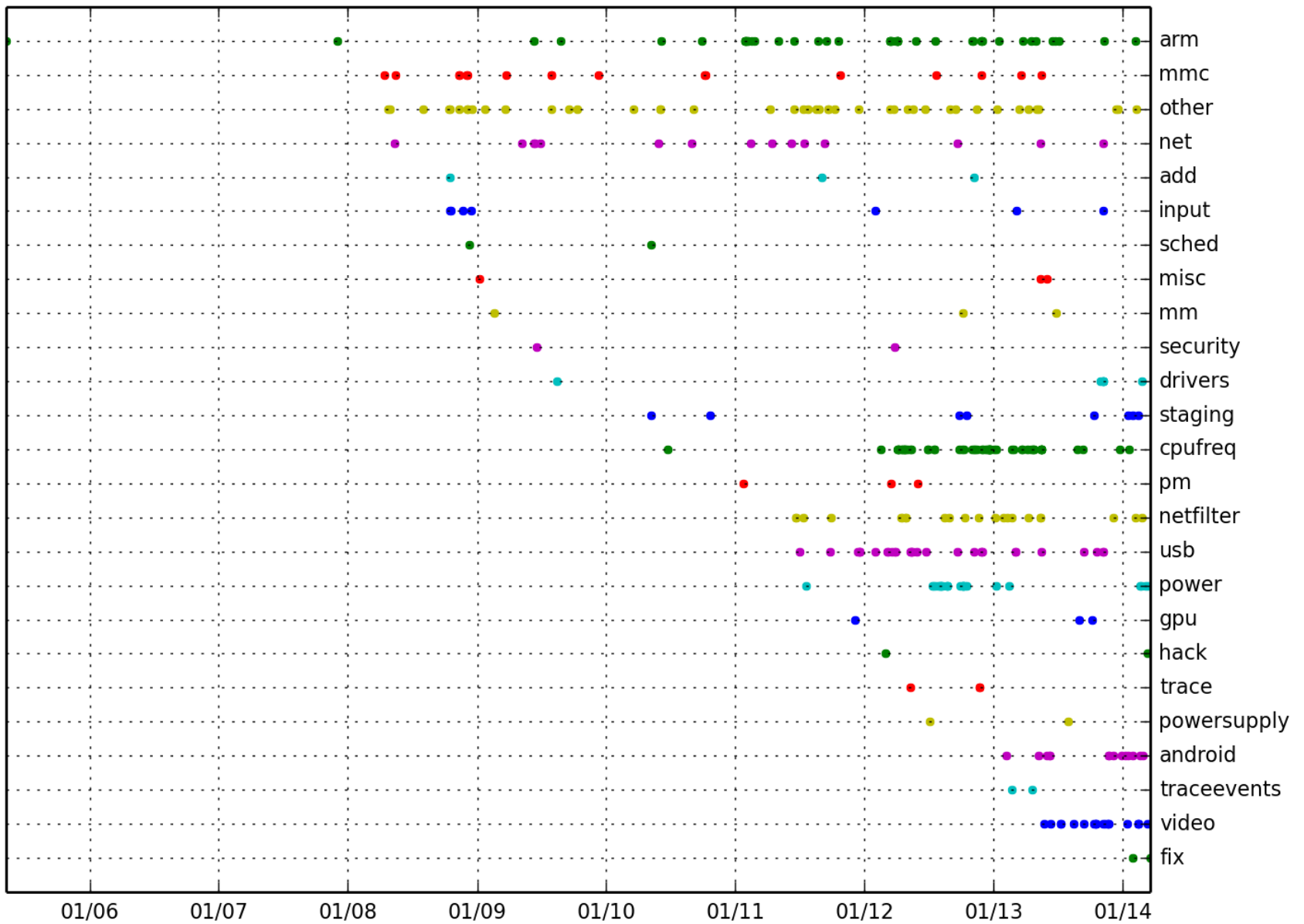
android-3.4: 765 patches

601 files changed, 142,968 insertions(+), 3,056 deletions(-)



android-3.10: 606 patches

412 files changed, 38,068 insertions(+), 1,718 deletions(-)



experimental/android-3.14 - 346 patches*
 269 files changed, 29,023 insertions(+), 1,016 deletions(-)

Current work in progress

- xt_qtaguid/netfilter upstreaming
- FIQ debugger functionality in KDB/KGDB
- ETM/ETB (via Coresight effort)
- ~~Volatile Ranges (ashmem)~~
- Constraint aware dmabuf helpers (ION)
- Bluetooth fixes/tweaks
- OTG wakeupsources
- configfs gadget (partial android gadget driver)
- dmabuf-fences (Android sync)
- Binder/Kdbus analysis & influence
- Suspend/Resume debugging helpers
-

What is left?

- ADF
- Power Aware Scheduling
(interactive cpufreq gov)
- Paranoid networking
- Per-process timerslack
- VMA naming
- readonly kernel text
- keychord/keycombo
- uidstat networking statistics
- RF_KILL_PM
- fuse client freezing on suspend
- tracing changes
- PPPoLAC/PPPoPNS
- Wifi control abstraction
- multi-appended dtbs ...

Thank you for your help!

Lets keep the momentum!

Backup slides

For staging removal discussion

Suggested items to be removed from staging

logger:

L (should be) using file based logging, and no longer needs the logger driver.

low-memory-killer:

Upstreamed mempressure notifications allow for pushing low-memory-killer policy out to userspace. L reportedly already making use of this.

alarm-dev:

timerfd supports *_ALARM clockids, so just a matter of moving userspace to timerfd from alarm-dev.

Requested clemency for some staging items

binder: Required for Android to boot. We don't yet have a good transition story here (though Serban may have some ideas), but this would really be a pain to have out of tree.

ashmem: Also required for Android to boot. While between memfd and volatile ranges, we could remove it, volatile ranges has stalled out for now.

ION: Has only been in tree since Dec. Constraint aware dmabuf allocator hopefully to allow ION to be removed, but not yet in place.

Sync: Hoping dmabuf-fences can fully replace, but ADF dependencies might make this difficult to drop right away. Defer to Martin and Rom.

Timed gpio/otuput: No real opinion here, but without further analysis hesitant to drop it.