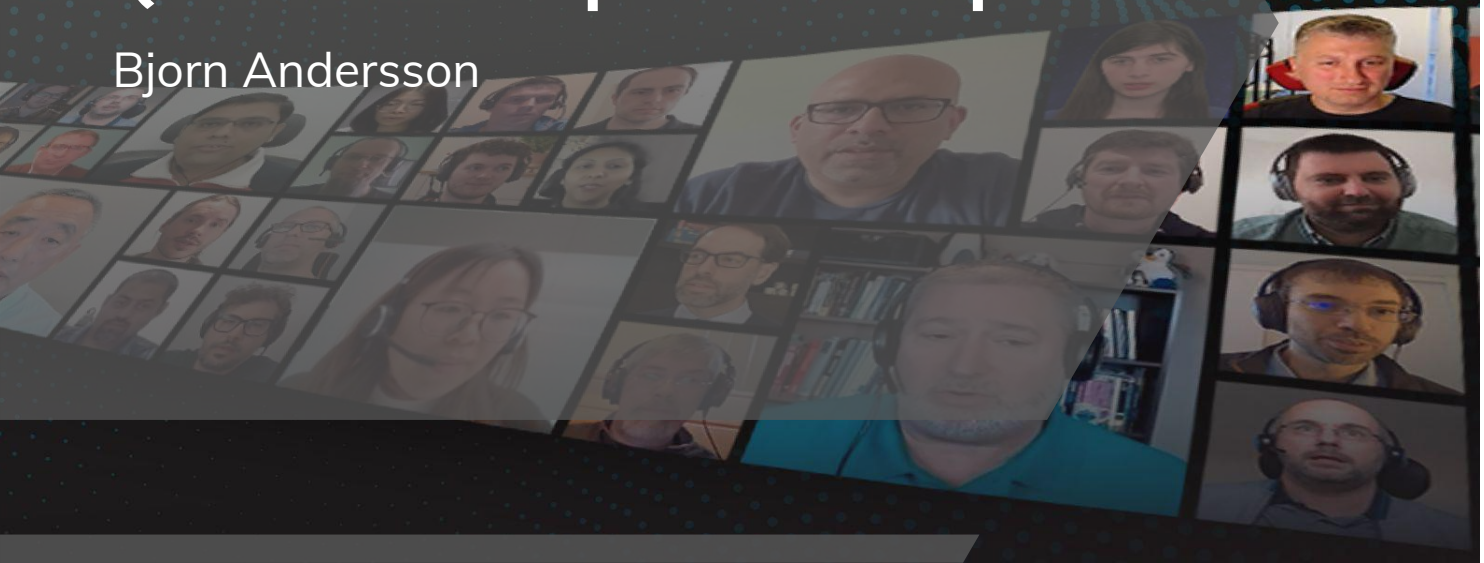
Qualcomm upstream update

Bjorn Andersson



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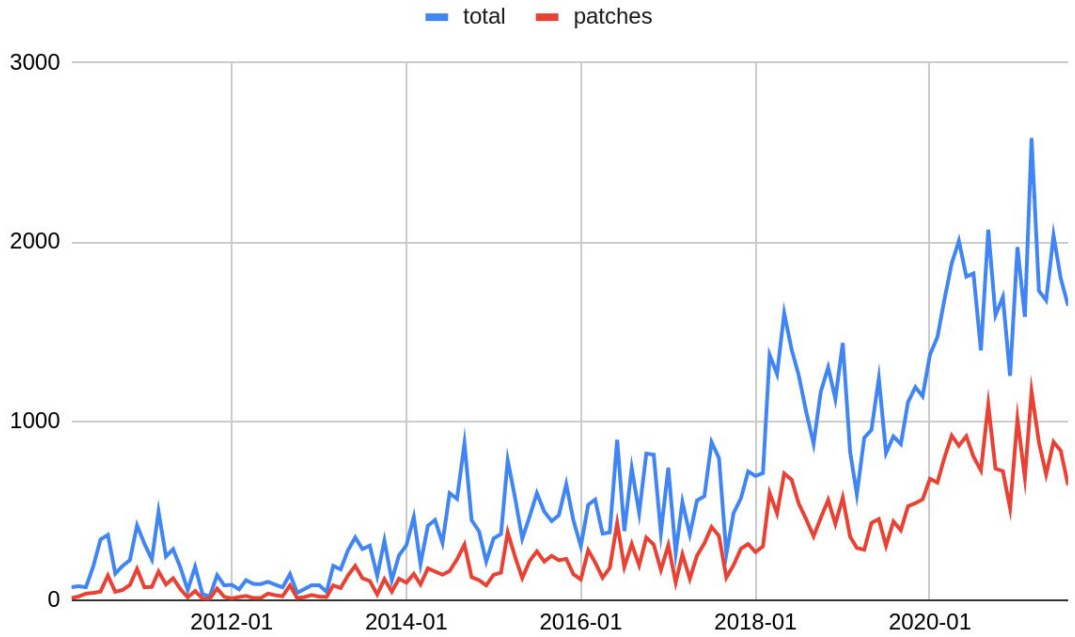


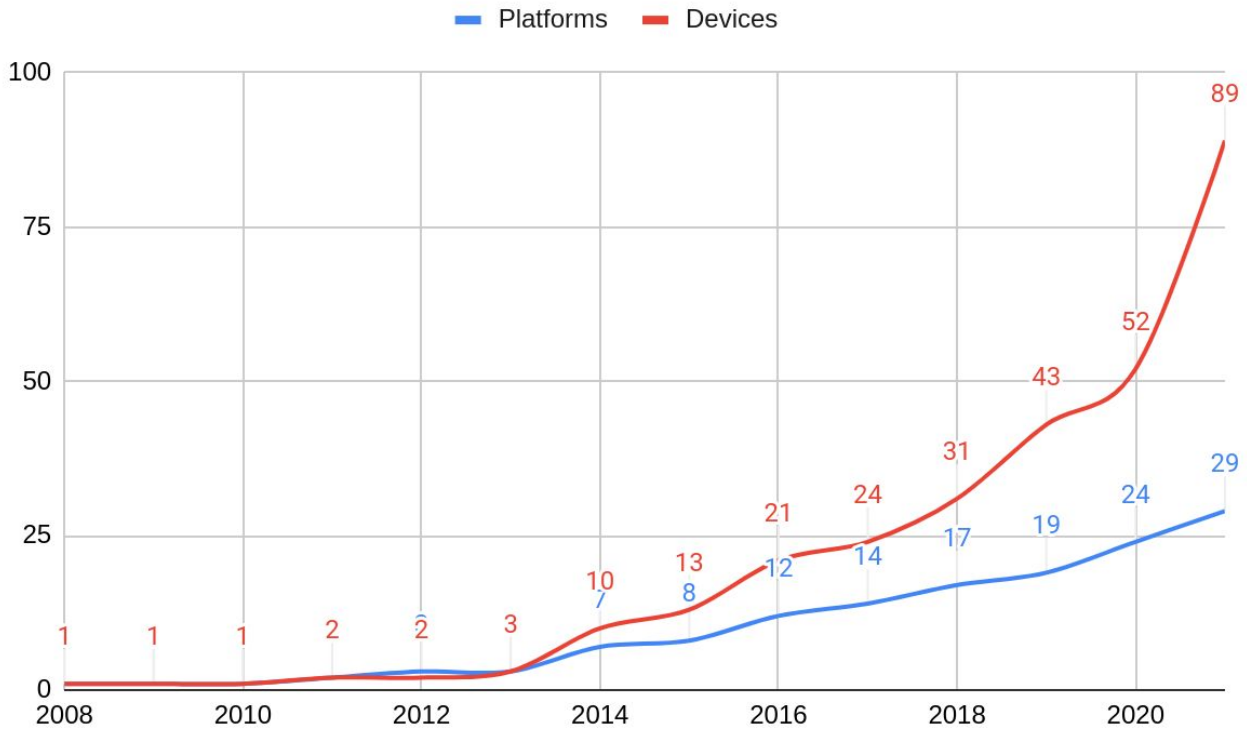
<u>Averages last 12 months</u>

1800 emails/month

880 patches/month

250 people sent their first email to linux-arm-msm in last 12 months

Platform/board growth



v5.15 will boot on 89 devices, across 29 Qualcomm platforms

Activity across the 29 platforms

Platform with activity during 2021, measured by DeviceTree updates.

(MSM7200A)
MSM8660
MSM8960
MSM8974
APQ8064
APQ8084
IPQ8064
MSM8916
MSM8996
IPQ4019
MDM9615
MSM8992
MSM8994
IPQ8074
MSM8974 Pro
SDM845
MSM8998
QCS404
SM8150
SC7180
IPQ6018
SM8250
SDM660
SDM630
SDX55

Platforms added 2021
SM8350
MSM8926
SC7280
SDM636
SM6125

Some platform news

SC7180:

- DisplayPort landed
- Power & suspend/resume polishing
- Shipping to customers

SDM630/SDM636/SDM660:

- DT squashed for reuse
- Interconnects, display, gpu, usb, camera, remoteproc, thermal...

SDX55:

- CPU & DDR scaling, SCM, NAND, interconnects, modem, IPA

SM8250:

- CPU power coefficients, thermal,
- MDSS and HDMI bridge enabled
- Audio support
- PCIe support
- Venus support

SC7280:

- CPUfreq, cluster idle, storage, interconnects, IPA, coresight, USB, thermal, qfprom...

Data connectivity

IPA:

- suspend/resume, improved modem crash handling and pm_runtime support
- MSM8998, SC7280, SDX55, SM8350
- sysfs interface for libqmi/mmcli

rmnet:

- QMAPv5 support incl checksum offload

WWAN framework:

- MHI, MHI/MBIM, rpmsg (SMD)

Userspace improvements:

- Missing pieces landed in libqmi
- mmcli/libqmi knows about IPA and rmnet

Out of the box data connectivity (LTE or 5G) using upstream kernel and recent userspace!

Power & performance

LMH driver:

- Configure hardware thermal limits
  - E.g. SDM845 limited at ~65C?
- Inform scheduler using thermal pressure

Tsens:

- MSM8960 bug finally resolved
- New (old) platforms added

Interconnect:

- 4 new platforms got providers
  - 8996 on the list
- Refactoring of shared logic

Memory bandwidth:

- DDR and L3 scaling

Display/GPU

Display driver:

- Alpha blended planes
- DPU interrupt code completely refactored

DSI:

- Support for dual DSI
- PHYs refactored

DisplayPort:

- Productization

Adreno:

- A660, A680, 7c-Gen3 support
- devfreq improvements for better selection of frequency
- iommu fault information for debug

More highlights

wcn36xx:

- Wake-on-WLAN
- Device-specific firmware
- Iris probe race resolved

Crypto driver:

- Compliance tested and issues addressed
- AEAD algorithm support

Camera:

- CAMSS enabled on SDM845

Audio:

- MBHC
- wcd938x support added

GPI:

- DMAengine for GENI devices
- Used by I2C on many phones

Some ongoing things

CPR:

- Patches on list for MSM8998/SDM660
- MSM8996?

DisplayPort:

- eDP, multi-DP ongoing
- The “pmic_glink” Type-C controller

Power sequencing:

- PCIe
- Serdev
- eSoC?

PCIe EP:

- SDX55 as PCIe endpoint
- MHI endpoint framework

AudioReach:

- Signal processing framework, integral part of new Qualcomm audio SDK

Snapdragon laptops:

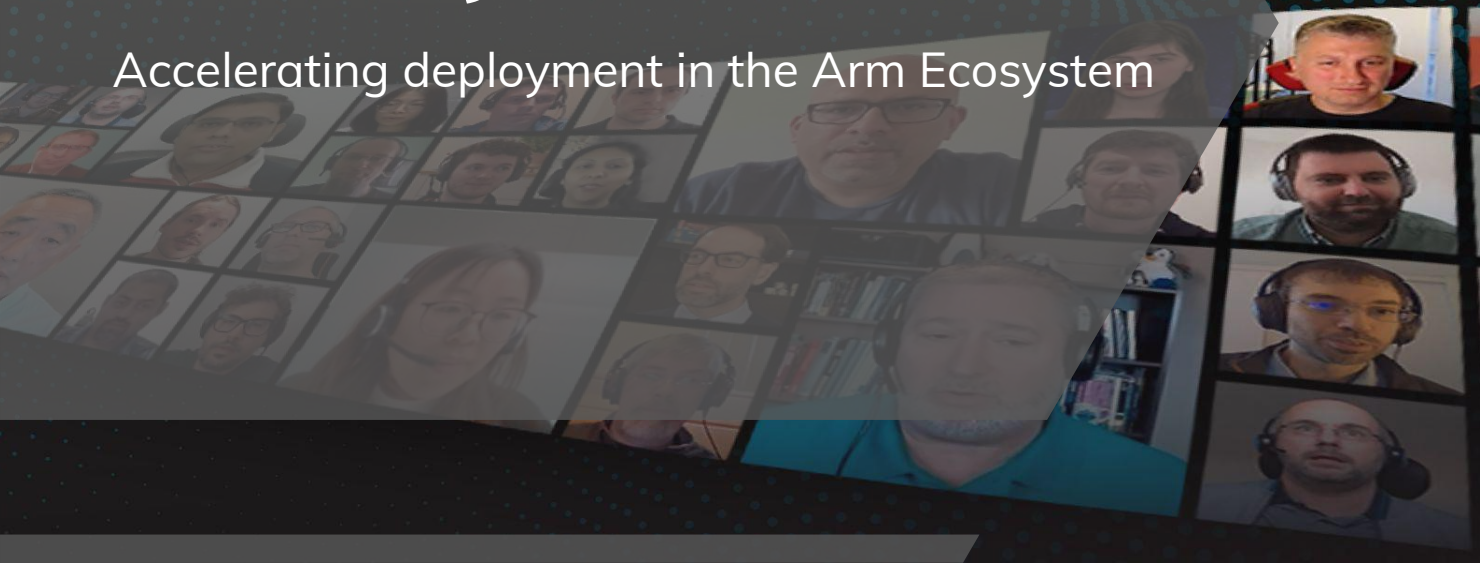
- Backlight, battery, Type-C controllers, (Embedded) DisplayPort, PCIe, low power

Contribute

- Subscribe to linux-arm-msm@vger.kernel.org
- Review patches
- Try out the upstream kernel on your board
- Help improve upstream drivers
- Upstream new drivers, platforms and boards
- #linux-msm and #aarch64-laptops on irc.oftc.net
- https://www.linaro.org/careers

Thank you

Accelerating deployment in the Arm Ecosystem



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