



Fedora on ARM(v7)

State of the Union

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Today's Topics

1. To Primary Architecture and beyond
2. Package / Software Status
3. Hardware Support
 - a. SoC support
 - b. Boards
 - c. GPU / Graphics
 - d. General HW
4. AArch64 (brief update)

Primary Architecture

Details

- We're Approved!!! (well provisional approval)
- Still a long way to go... the end of the race is just beginning!
- Standard Fedora primary procedures now (koji/bodhi etc) and QA
 - Better for end users as simultaneous updates
 - Saves me time as not having to deal with koji-shadow (more time for issues & maint help)
 - Quicker break/fix cycle on ARM as maintainer knows it's broken and can engage

Package/Software Status

Package overview

- Quick Fedora 19 stats
 - ~13611 source packages in mainline
 - All but 233 built on ARM (some x86/PPC/s390 only)
- Missing functionality
 - Some bits broken (llvmpipe)
 - Some languages need bring up
 - Some sub package/functions missing/reduced
- With 13K packages we need help to ensure we identify anything that is missing as it's impossible for us to get it all

Brief missing overview

- Full Stack protection: actively working with u/s
- Languages
 - D (ldc and sub packages) due to land u/s
 - ADA – Is supportable but needs bringup using other distros ADA. Not been high prio
 - Pascal (fpc) – Needs bring up (Hans has vol)
 - Other small bits (slisp/sblc) and poss other minors
- Random packages – numbers reducing quickly, some just incorrect distro compiler flags, x86 instructions, bugs etc plus ARM optimisation

Hardware Support

SoC Support

- Single multi platform unified kernel!
 - Like i386 we have a standard and PAE kernel
- SoCs enabled currently are highbank, OMAP/AM33xx, i.MX, Vexpress, Tegra, Exynos, Rockchips, SunXi
- Some supported better than others but changes quickly with each new kernel
- SoC and driver support expanding constantly
- Some still a way off like msm

Device Support

- Four devices supported in Fedora 19
 - PandaBoards, Trimslice, Highbank, Vexpress qemu
- Fedora support 20 will bring a few more:
 - Calxeda: highbank and midway (A15)
 - i.MX: Wandboard (3 boards), utilite and others
 - Tegra: Trimslice (pos others: AC100, tegra 3/4 dev)
 - Vexpress: improved qemu experience and speed
 - TI: Panda, Beagle xM, BeagleBones (B/W)
 - Exynos: Chromebook, Arndale, Odriod etc (hoped)
 - AllWinner/Rockchips: (initial basic support)

GPU Support

- Basic 2D support for OMAP/Exynos (armsoc)
- Reverse engineering efforts under way
 - LIMA (ARM Mali – many and varied SoCs)
 - Freedreno (Qualcomm Snapdragon SoCs)
 - Etnaviv (Vivante GCxxx GPU – i.MX, Marvell, others)
 - SGX... status unknown!
- Open drivers being written or specs released
 - Tegra: 2D/3D drivers in progress
 - Rumours of others (watch this space)

Other HW Support

- We've been concentrating on core support but there's lots more to work on:
 - HW Virtualisation, virtio
 - Media offload engines
 - Sound including offload/HW compression
 - i2c/GPIO/input, FPGAs (ZYNQ-7000) etc
 - Sensors inc gyro/compass/temp/barometer etc
 - BBone Capes and other expansion
 - Crypto / RNG
 - Lots of others....

AArch64

AArch64

- Over 11,800 source packages built (out of 14,059)
- A Fedora 19 test image
- Moving to koji RSN
- Pace continues a pace across multiple arenas both within Fedora and cross distro being lead by Linaro
- Testing on Applied Micro's "Mustang" X-C1 board with a F19 remix for it available soon

Summary

- We've come a LONG way in the three years since Seneca took over from Marvell for F-13
- Still a long way to go
- Fedora 20 is going to be a major milestone
- How can you help?
 - Test & play with HW, document your HW
 - Drivers and other components of working systems
 - QA, Software testing and optimisation
 - Do what you'd do on x86 :-)

Questions?



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