

openSUSE & ARM



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openSUSE Boosters

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ARM



ARM

- 32-bit embedded RISC microprocessors architecture
- widely used in embedded devices
 - cell phones
 - tablets
 - recently netbooks
 - cheap desktops for geeks
- power efficient
- used to be less powerful than x86
- gaining performance while keeping power efficiency
- X86 is gaining power efficiency while keeping some of the performance

ARM examples: Google Nexus S



Photo by Samsung USA

ARM examples: ASUS Transformer



Photo by www.blogeee.net

ARM examples: Beagle and Panda Board

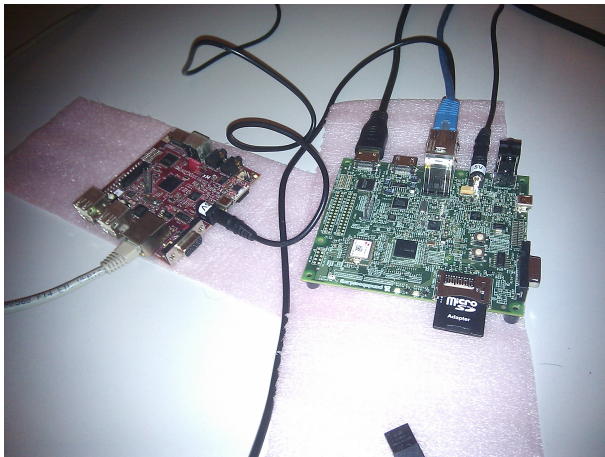


Photo by me

ARM examples: Panda Board build server



Photo by steevithak

ARM examples: HP Redstone Development Platform



Photo by HP

ARM examples: HP Redstone Development Platform

- Calxeda EnergyCore ARM Cortex processors
- 288 servers in 4U
- half rack
 - 1600 servers
 - 9.9kw
 - 1.2M USD

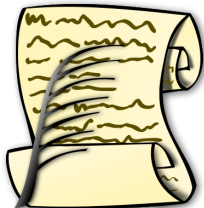


openSUSE @ ARM



Little bit of history

- started as GSoC in 2009
- died later because of lack of people
- popped up again this year on openSUSE Conference
- several people spent last hackweek reviving it
- busy since then, doing big progress
- completely community project



Workflow

- we use Open Build Service
 - actually two ;-)
- shadows openSUSE:Factory
- fixes go directly (via devel projects) to the Factory
 - no separate ARM sources
 - no special treatment for ARM
 - anybody can check what is wrong and fix it
 - always latest and greatest



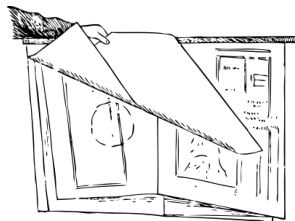
Supported architectures

armv7l

- armv7-a tuned for cortex-a9
- main focus
- kernels so far for omap2+, tegra2, imx51, u8500 and exynos4
- hard float -neon +thumb +vfpv3-d16

armv5el

- meant for maximum compatibility
- softfp -all -thumb



Special thanks

- EfikaMX devices donated by genesi!



- Panda Board devices donated by TI and Panda Board community!



- Panda Board and Origen devices donated by ARM Holdings!



Building

QEMU

- building ARM port on our x86_64 build farm
- user mode emulation + binfmt
- publicly accessible - <http://build.opensuse.org>

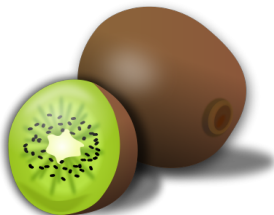
Native build

- rebuilds everything natively on our ARM build farm
- hidden behind the walls - security reasons



Kiwi

- image builder
- self expandable images
- easy to deploy
 - `dd if=image.raw of=/dev/sdb`
- configuration ready for openSUSE JeOS
- highly configurable
- used by SUSE Studio



Troubles

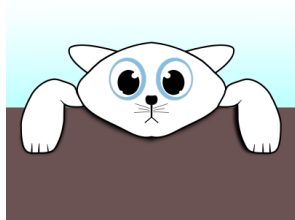
GPU drivers

- some closed source, some highly wip
- some only as binary blobs for softfp

QEMU

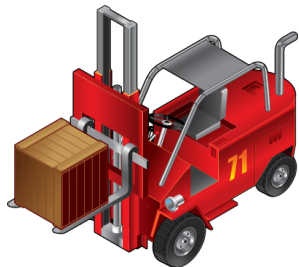
- emulation is not perfect
- creating new process takes time

Small RAM



What we have

- still work in progress
- native build hosts
- vivid community
- more than 4000 packages
- about 500 to go in Factory
- hopes up for ARM supported 12.2 ;-)



Thank you! Questions?

