

# Running Fedora on Raspberry Pi

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# Agenda

- Introduction to Raspberry Pi
- Building Toolchain
- Running Fedora
- Challenges
- Q&A

# Introduction to Raspberry Pi

- The Raspberry Pi is a credit-card-sized single-board computer developed in the UK by the Raspberry Pi Foundation with the intention of stimulating the teaching of basic computer science in schools.



# RPi Spec.

- SoC: Broadcom BCM2835
- GPU: Broadcom VideoCore IV
- Memory(SDRAM): 512 MB
- USB 2.0 ports: 2
- Onboard storage: SD / MMC / SDIO card slot
- Onboard network: 10/100 Ethernet (RJ45) via USB hub
- Power ratings: 700 mA

# Building Toolchain

- Why?
- How?
  - crosstool-ng
- C Flags?
  - -mfpu=vfp
  - -mfloat-abi=hard
  - -march=armv6zk
  - -mtune=arm1176jzf-s

# Running Fedora

- Fedora ARM Status
  - DOES NOT support RPi officially
  - Why?
- Current Stable Release: Fedora 17
  - rootfs / distro
  - ARMv5
  - ARMv7 => hard float point support
- Latest Release: Fedora 18 Beta
  - distro
  - ARMv5 => Remix Only
  - ARMv7 => hard float point support
- Download Page
  - [http://fedoraproject.org/get-fedora-options#2nd\\_arches](http://fedoraproject.org/get-fedora-options#2nd_arches)

# Instructions

- Clone following git repos:
  - `git://github.com/raspberrypi/linux.git`
  - `git://github.com/raspberrypi/tools.git`
  - `git://github.com/raspberrypi/firmware.git`
- Compile Kernel and create kernel.img
- Prepare 2 partitions(vfat + ext4) on SD card
- Install firmware, bootloader and kernel.img
- Extract Fedora rootfs image
- Install kernel modules
- Create proper config.txt and cmdline.txt files
- Boot!

# Challenges

- Instructions Failure
- Atomic Operations
- SFP v.s. HFP
- USB / Ethernet Issue(s)
- Performance



Q&A

Thanks!