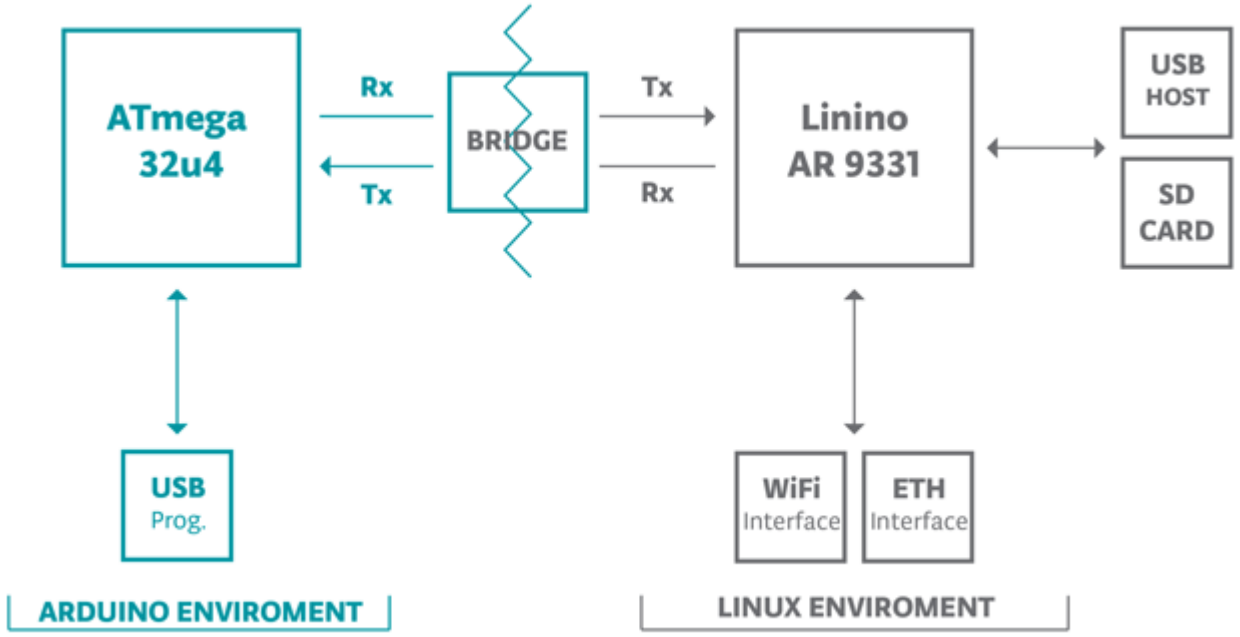
Arduino + Linux = ...

Štěpán Bechynský
@stepanb

Limits of Arduino

- Low performance for some operations
- Low memory
- Communication limits

Microcontroller ↔ Linux



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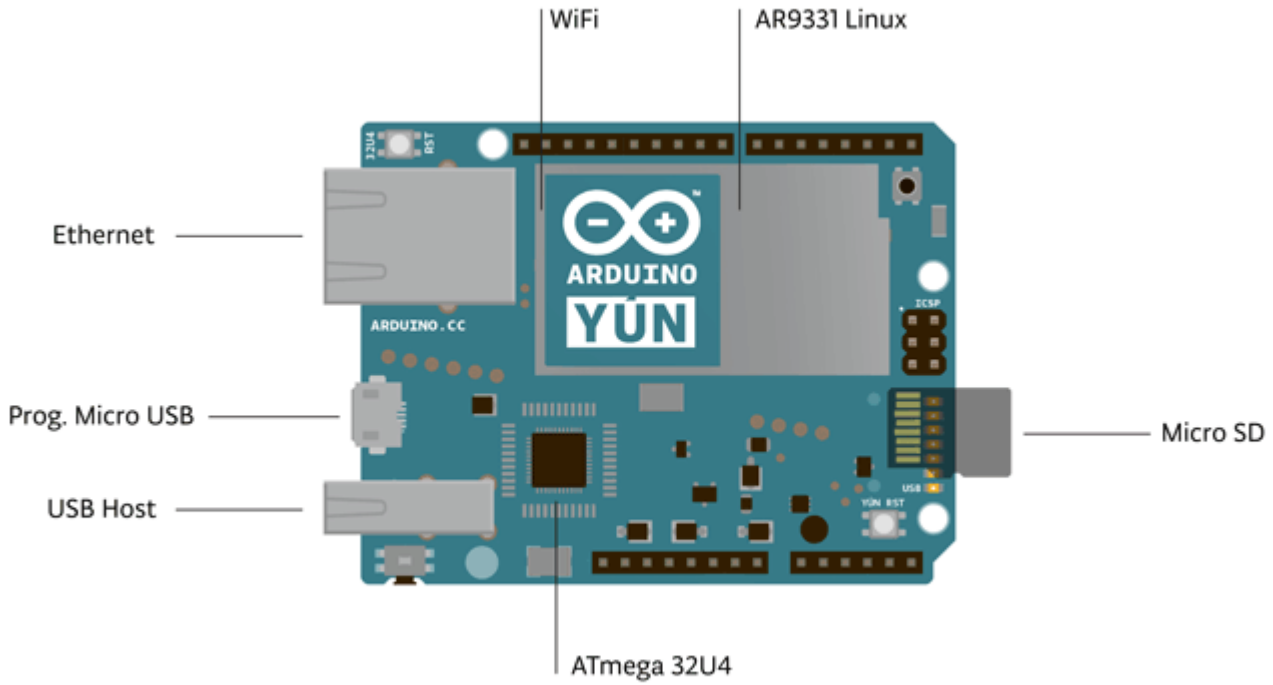
Bridge library

- Communication between Arduino and Linux
    - Serial1 is dedicated for communication
    - You can’t use Serial1
- You can run any command on Linux and use output in Arduino
- Access to network connectivity
- You can control Arduino sketch from web page
    - Build in web server

Arduino Yún



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Arduino Yún – Arduino

- Almost same as Arduino Leonardo
- Arduino IDE 1.5.4 and later
- No voltage regulator on board
    - Only 5V can be used
- Shield needs long pins

Arduino Yún – Linux

- Linino based on OpenWrt
- Atheros AR9331
- 64 MB RAM, 16 MB Flash
- Wifi
- Ethernet

DEMO

Arduino Yún and Bridge library

Tips and tricks

- Create *arduino* folder on SD card with *www* subfolder
- Use wifi or ethernet to upload sketch and web pages
- Use *opkg* package manager to install new software
- Python is preinstaled

Arduino Tre

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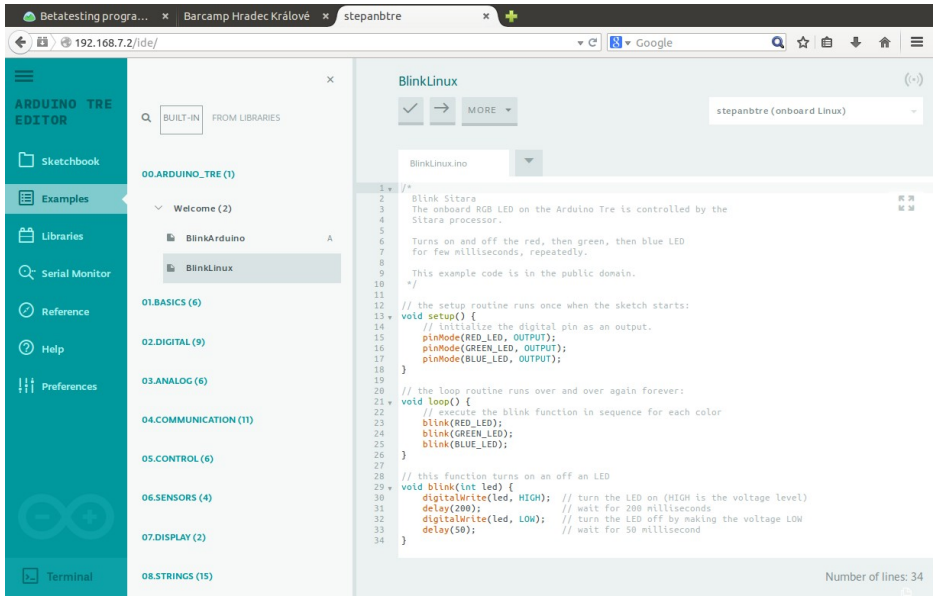
Arduino Tre – Arduino

- Almost same as Arduino Leonardo
- Web based IDE on board
- Serial1 is dedicated for communication with Linux
    - You can’t use Serial1



Arduino Tre – Linux

- Debian
- BeagleBone
    - Processor Texas Instrument Sitara AM3359AZCZ100 (ARM Cortex-A8)
    - SRAM DDR3L 512 MB RAM
    - Ethernet 10/100
    - 4 USB 2.0 host ports
    - Video HDMI (1920x1080)
    - Audio HDMI, stereo analog audio input and output
    - Digital I/O Pins (3.3V logic) 23
    - PWM Channels (3.3V logic) 4
    - MicroSD card

Arduino Tre – status

- Beta testing
- Latest Linux image 0.0.9

DEMO

Arduino Tre web based IDE

Q & A