Linux Overview

Advanced Embedded Linux Development

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Learning objectives:

Linux History

Linux Requirements

Linux contributors

Starting Out with Linux

- Embedded Linux started with the TiVo in 1999
- 2 billion devices running Linux as of 2017
- Why run Linux?
  - Moore's Law

Mastering Embedded Linux Programming Chapter 1
http://www.iretron.com/blog/posts/technology-flashback-tivo-1999/

Points Driving Linux Adoption

- Functionality
  - Support built in for scheduler, network stack, USB, WiFi, Bluetooth, storage, etc
- Ported to wide range of architectures.
- Open source, modifiable
- Active community - answer questions.
- No vendor lock-in

Linux Considerations

- Needs a 32 bit processor and ~16+MB of RAM, ~8MB of flash
  - Needs Memory Management Unit for all practical purposes
- Needs skill set of engineers (IE you!)
- May not be appropriate for some real-time applications.

The Players

- Open Source Community
  - Alliance of developers, not for profit, academic, commercial
  - Group for each set of applications
- CPU Architects/SOC Vendors/Board Vendors
  - Create reference hardware/ board support packages (BSP)s