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Improving U-Boot UEFI App Support

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We make autonomous trucks

Introduction

- Heterogeneous computing environment
- Similar security goals
- Want to make things look as similar as possible

U-Boot

- Commonly used embedded bootloader
- Typically targets bare metal
- Supports providing UEFI runtime environment

U-Boot UEFI app support

- Run U-Boot as a UEFI app
- Originally added by Google in 2015
- Kind of minimal viable implementation

What we wanted

- Proper handoff to kernel UEFI stub
- Ability to use UEFI level drivers and functionality
- Avoid hardware-specific config

Handoff support

- Extend x86 bootm command to use kernel UEFI entry point
- Need to rewrite to use modern handoff protocol
- U-Boot no longer calls ExitBootServices()!

UEFI Drivers

- Add UEFI network driver
- Add UEFI TPM driver
- Fix a couple of bugs in the block driver
- Support for UEFI variables

Hardware-generic config

- UEFI memory map varies between systems, boots
- Command to search for available memory region to load image
- Surely there’s a better way to do this

Where’s the code?

- Should be on the mailing list now

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