

(U)EFI setup for Linux

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EFI history

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 - for the new IA64 architecture
- As replacement for the BIOS (1981)

EFI alternatives

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- Libreboot (Coreboot without proprietary firmware blobs)

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Problems

- *Only limited supported hardware*

EFI support

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- Windows since codename "Longhorn" (~ 2006)
 - Later called Windows Vista

EFI-boot prerequisites

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- EFI has its own "bootloader"
- which
 - can only read GPT partition table
 - can only read FAT filesystems
 - can only execute binaries in PE format (Portable Executable, Microsoft)
 - has file magic 4D5A (MZ)

EFI-boot problems

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- EFI can be shipped in two forms

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 - EFI-32

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 - EFI-64 (default)

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- EFI can be shipped in two forms
 - EFI-32
 - EFI-64 (default)
- EFI-32 can only execute 32Bit PE executables
 - even if the CPU can execute 64Bit code

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- SecureBoot

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 - BIOS initialization and MBR boot support

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- Linux installer support

Linux EFI and setup tools

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 - tool to create GPT partition tables

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- mkfs.vfat
 - tool to create FAT file systems

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 - an entry with the type EF00 (EFI-System)
- if CSM is supported and turned on MBR boot is possible
 - an entry with the type EF02 (BIOS boot partition)
- the EF00 partition needs to be FAT formatted

efibootmgr

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- output presentation

Questions?

Workshop